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EDITED BY

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Fellow of American Academy of Medicine, Etc.

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{ VOL. X. No. 4.
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ORIGINAL CONTRIBUTIONS.

Lecture on Diphtheria.

BY J. A. THACKER, A. M., M. D., F. R. M. S.

(Continued from March number.)

DRS. H. C. WOOD and Henry F. Formad have made experiments of inoculating lower animals with diphtheritic matter. In thirty-two instances in which inoculation of diphtheritic matter was performed subcutaneously and in the mucous membrane of the mouth, the animals died in six days. Only in one case, we are told, were there any exudations present in any organ to make it at all probable that diphtheria was the cause of death. Oertel has stated that when animals die, which have been inoculated with diphtheritic matter, that the internal organs are infested with micrococci, and that the presence of them is characteristic of diphtheria. Wood and Formad, however, have failed to find micrococci in either the inoculated animals that have died or recovered.

These investigators, when they cut the jugular vein and examined the blood instantly, have found no signs of bacteria. But when delaying a few minutes after the completion of the *post-mortem*, on opening the heart and examining the blood in it, it would be found containing many of these low organisms. In every case, as I learn from Dr. Jacobi, to whose work on diphtheria I am indebted for these facts, the internal organs were tubercular. But subcutaneous injection of innocuous foreign material, in five out of nine experiments, was followed by

the same result, so that this condition was not due, *per se*, to the inoculation with diphtheritic matter.

Prof. Jacobi's very recent work on diphtheria contains some facts in regard to diagnosis that deserve to be noted. He mentions that sometimes either catarrhal secretion or the effects of suppuration may be mistaken for the exudation characteristic of diphtheria. But these may be easily washed away or removed by a brush, or squeezed out of the follicles of the tonsils, into which a probe can be introduced sometimes to the depth of one-half inch. Muguet of the mouth might be mistaken by the very inexperienced, so, also, the gray discoloration of superficial follicular ulcerations. Such patches, Dr. Jacobi states, are very numerous in the fauces and on the lips and cheeks, never on the gums, except in ulcerous stomatitis, which is not follicular. They are accompanied, too, by vesicles containing more or less serum, which have not yet ruptured. "It must be remembered, however, that the mucous membrane, when deprived of its superficial covering, is liable during an epidemic of diphtheria to become infected, like every other wound. I have seen cases in which stomatitis and diphtheria existed side by side, the latter having invaded the exposed surfaces resulting from the former."

Fever, Dr. J. states, is not always a prominent symptom; in fact, he says, at times it is necessary to take the rectal temperature in order to discover an elevation; as a rule, simple diphtheria of the tonsils is accompanied by very little fever. There are plenty of exceptions, however, to this. High fever in the beginning sometimes renders the diagnosis difficult or postpones it.

As the work of Prof. Jacobi referred to contains not a little not elsewhere to be found, I am disposed to quote from it still further. The value thus added to the lecture will compensate for the deficiency in original matter. The absence of lymphadenitis, he says, does not nullify the diagnosis of diphtheria, for when the tonsils are affected by the disease, there is little or no swelling of the neighboring glands. When the affection is located in a mucous membrane richly endowed with lymphatics, then there is considerable swelling of the glands. It is marked when the nose is affected. A few hours' duration of nasal diphtheria suffices for the development of a severe lymphadenitis, especially at the angles of the jaw. When

the glands at that point are much inflamed and enlarged, showing the existence of lymphadenitis, the throat should be examined with the idea of finding a membrane extending upward. But, in order to discover a membrane in the nose, it may be necessary to make use of a very short, broad rhinoscope reaching upward to the bony structure of the nose.

The swelling of the lymphatic glands, which Kronlein regarded as pathognomonic of membranous laryngitis, Prof. Jacobi denies as a fact. "Not only is that not the case," he states, "but what I have said above of the absence or scarcity of lymphatics and muciparous glands of the vocal cords and their neighborhood, renders the absence of lymphatic swellings a necessity, provided the latter do not depend on complicating diphtheria in other localities. In uncomplicated diphtheritic laryngitis I expect no lymphadenitis." He proceeds to say that "one of the pathognomonic symptoms of diphtheritic laryngitis, 'membranous croup,' is the relative *absence* of fever. Catarrhal laryngitis, pseudo-croup, is a feverish disease. A sudden attack of 'croup,' with high temperature—provided there is no pharyngeal or other diphtheria present—yields a good prognosis; without much fever, a very doubtful one. If I had but words strong enough to impress that fact upon the minds of my readers, for this is the very diagnostic point against which most sins are committed."

J. Solis Cohen tabulates the clinical differences between croup and diphtheria as follows, after stating that there is no actual anatomical distinction between them, either in the morbid products or the subjacent mucous membrane:

CROUP.

Not specific in origin.
 Never contagious.
 Not inoculable.
 Not adynamic.
 Usually sporadic.
 Rarely attacks adults.
 Always accompanied by an exudation.
 Only fatal by physical obstruction to respiration.
 No weakening of the heart's action.
 Pulse frequently strong and hard.

DIPHTHERIA.

Specific.
 Frequently contagious.
 Inoculable.
 Adynamic.
 Generally endemic or epidemic.
 Frequently attacks adults.
 Occasionally no exudation occurs.
 Often fatal without the least impediment to respiration.
 Marked weakening of the heart's action.
 Pulse never strong and hard, even though rapid and full.

Respiration accelerated in proportion to the pulse, rarely less than 1:4.	Respiration not accelerated; usually less than 1:4.
Rarely albumen in the urine.	Albumen frequently present in the urine.
No secondary paralysis.	Secondary paralysis frequent.
Tolerates antiphlogistics.	Does not tolerate antiphlogistics.
Rarely occurs more than once in the same person.	Frequent relapses.

From what has been stated it will be seen that Prof. Jacobi would not give assent to the distinctions thus made by Dr. Cohen.

The appearance of albumen in the urine will serve sometimes as a valuable diagnostic symptom between diphtheria and scarlatina. In scarlatina it is rarely noticed in the first week. It generally appears about the ninth or tenth day at the earliest, and may not be found until the twenty-fifth, or even the thirty-third day. In diphtheria it appears in the first few days, if at all—neither the degree of fever nor other general symptoms affording an explanation of its presence.

Gangrene manifests itself in a destruction of the tissues, for instance of the vagina or cornea, and depends sometimes on pressure by the impregnated surface; or it occurs on such privileged localities as are adapted, from their coating of pavement epithelium, for deep inroads of the degenerative process. Care should be used not to mistake any thick black masses at once to be gangrenous. It is not often that dangerous hemorrhages result from gangrenous portions of the neck.

When paralysis occurs, it commences usually in the soft palate and passes to the ciliary nerves. Besides these, there may be strabismus, general debility of the muscular system, local paralysis, atrophy of single muscles, atrophy of skin, and nutritive disorder, with alopecia, disorder of sensibility.

Since I have regarded it as acceptable to my hearers to quote, in this part of my lecture, extensively from Prof. Jacobi's recent work on diphtheria as embodying valuable researches in the disease by an eminent physician, who has given it much attention, I will here briefly epitomize his "summary:"

Diphtheria is characterized by its membrane. The diagnosis from muguet is easy. Follicular inflammation of the tonsils is recognized by its local character, by the ready removal of the deposits, and the easy introduction

of a probe into the follicle. Fever is not always high. Sometimes the temperature is even low in very bad septic cases. High temperatures, in the beginning, are less frequent than, for instance, in scarlatina. Glandular swellings may be absent for many reasons. Nasal diphtheria has much glandular swelling; may, in some distinct cases, have none at all. Diphtheritic laryngitis has less fever than catarrhal laryngitis, and when uncomplicated shows no glandular swelling. The character of the laryngeal membrane does not depend on the condition of the pharynx. Complete aphonia and uniform difficulty of inspiration and expiration indicates membranous obstruction; difficult inspiration, with easier expiration, and but partial hoarseness or almost clear voice, indicates the presence of local edema and consecutive paralysis of the vocal cords.

Primary diphtheria of the trachea is difficult to diagnose; it is likely to exist when, after apparently catarrhal symptoms, those of laryngeal stenosis occur very suddenly and fatal. The progress of the diphtheritic process downwards can be watched through the tracheotomy tube, and estimated by the absence of irritability of the mucous membrane of the trachea. Albuminuria is mostly an early symptom, and disappears more readily than in scarlatina. Diphtheritic paralysis is recognized by the frequency of its starting from the pharynx, its irregular course. It is mostly motory, sometimes sensory or sensitive.

TREATMENT.—In the treatment of this affection there is no specific remedy to rely upon. At various times in the past different medicines have been held forth as specifics quite confidently, but experience has proven them all to be of no avail in combating the disease or destroying the poison on which it is dependent. As the exciting cause is generally agreed to be a specific poison, it would seem as if an antidote might be discovered for it. But research in that direction has as yet failed to discover any. At one time chlorate of potash was relied upon very much in the treatment, but beyond acting as a febrifuge, like a number of other saline medicines, it has seemed to have no effect. As a topical agent, it seems to act beneficially, in consequence of its action upon ulcerated surfaces of mucous membranes. The muriated tincture of iron, also, at one time, was regarded by some

as almost a specific. But I do not think that, now, it is credited with any other property than that of a tonic, acting beneficially in some stages of the disease. Coming in contact with the diseased parts, when swallowing it, has produced beneficial results, destructive, as it would be, to any bacteria or fungi that had collected. But it would be more efficient in this respect if applied by means of a brush or probang.

Being produced by a blood poison, the exudation and throat symptoms are but external manifestations of the action of the poison, and no more constitute the disease than the pustules of small-pox constitute that disease. Therefore, while topical applications may do good, yet they can do nothing in the way of curing the disease or cutting it short. Nor will any internal treatment of which we have knowledge cut short the disease. This can not be done until a specific has been found—an antidote to the poison.

At the present time, all that we can do in the way of treatment of diphtheria, as in all other specific affections, as small-pox, etc., is to moderate its force, prevent, if possible, complications, and conduct it to a safe issue. It will run its course in spite of everything we can do. In due course of time, if death should not occur before, the action of the poison will become exhausted, or will be eliminated, and then the patient will recover by his own powers, especially if strengthened by the proper tonic and stimulating medicines. Every physician is aware of the *vis medicatrix naturæ*, and, in consequence, that the body endowed with this force, when attacked, puts forth every effort to throw off disease, and will succeed if the enemy be not too strong. The duty of the physician is to see to it that nature has every favorable opportunity for the struggle.

It seems not improbable that, at some time, a specific may be found that will at once destroy the poison. While we know that the disease is caused by a poison, we have as yet not been able to demonstrate what the poison is. No chemist has as yet been able to separate it and study its nature. It may be of a chemical nature, or it may be peculiar fungi, or it may consist in some kind of animalcule. However, I am not disposed to believe in the animalcular theory.

In malignant cases of the disease no treatment seems

to be of any avail whatever. Death takes place sooner or later after the commencement of the attack in spite of every effort on the part of the physician. He is utterly powerless in doing anything to moderate the force of the disease. Sometimes, as I have intimated, the poison is of such malignant character that it kills almost instantly, like a large dose of strychnine—there being no time for external manifestations. Almost the first and only symptom being death. We know in such cases that diphtheritic poison is the cause of death from the fact that diphtheria of a malignant character is prevailing as an epidemic, and probably several of the same family have already died from it.

Mr. Wm. Squire, in "Reynold's System of Medicine," advises the use of both local and general treatment. He considers that in no case can either be safely disregarded. I have been disposed, however, in the case of quite young children to forego employing topical applications, when the little patient was always disposed to resist them, exhausting its strength in its struggles. In such cases the exhaustion brought about has appeared to do more injury than the applications done good. The same authority advises the use of alcoholic stimulants throughout the disease. He states that they are as serviceable early in the disease as in that part of its course when they become indispensable. "A rapid pulse indicates their employment, and heat of skin is no contraindication." The limit to their administration should be calculated, he says, according to the age of the patient, and the amount of bland liquid representing water that can be taken at the same time. Many other writers recommend the free use of alcoholic stimulants throughout the course of the disease. But I consider that it is calculated to do injury to advise the use of alcohol without exception. Very many cases will be met with that do not bear the use of it well. In not a few the effects in small doses is to increase the heat of the skin, induce headache, dull the sensibilities, etc. To persist in the use of it under such circumstances will do harm. Some other stimulant, as carbonate ammonia, which often acts well, should be employed. When it is observed that the force of the pulse is increased, and the skin not made hotter, or, in other words, when used, its action is seen to be beneficial, alcohol may then be properly exhibited, and in quantities limited by the limits

of tolerance. Its beneficial effects, however, should be observed to warrant its continued use; and to use in the notion that the strength is kept up by it, when the unpleasant effects are produced, to which I have alluded, is to commit a grave error. It is, nevertheless, often done.

Dr. Hartshorne recommends the use of small pieces of ice taken into the mouth, and swallowed slowly. Some practitioners, he says, assert this to have a more beneficial effect than any other local remedy. But, of course, it can not be employed with very young children.

A solution of nitrate of silver, one part to three parts of distilled water, is employed by many practitioners with favorable results as an application to any patches of membrane that may be visible, and to the surrounding turgid tissue. Some prefer using the solid stick of nitrate. I prefer the latter to a solution, as, with the stick, the application can be better limited to the parts desired to be touched. When the membrane has thus been removed by the caustic, the applications should be continued to a proper degree to the parts beneath. Dr. Jenner is of the opinion that repeated applications of caustics are injurious. He recommends one single but efficient application of a strong solution of nitrate of silver (℥j to ʒj of water), as a remedy which may *stay* the *spread* of the exudative inflammation; but that, on the whole, hydrochloric acid and water in equal parts will more frequently attain the object. *Medicinal carbolic acid* (as prepared by Calvert, of Manchester, England), is highly commended by Dr. Aitken.

In mild cases of diphtheria of the tonsils, Dr. Jacobi states that he endeavors to destroy the membrane, but only when it can be reached with ease. In his opinion, the indiscriminate use of mineral acids and lunar caustic have done more harm than good. When he can easily reach the membranes, he usually applies concentrated carbolic acid. Scratching of the mucous membrane and wounding of the epithelium should be avoided, as such accidents assist in spreading the membranous process in a very short time to the surrounding parts.

I will mention here, that those who claim for muriated tincture of iron something similar to a specific effect, in the treatment of diphtheria, state that it should be administered in frequently repeated doses, otherwise the

effect will not be obtained. Say, a dose of five to fifteen drops should be given every ten or fifteen minutes, half hour or hour. I remember some time ago of hearing a member of the Academy of Medicine of Cincinnati say, in a discussion, that he had exhibited the tincture in *teaspoonful doses*. Of course it must have been considerably diluted, and taken into the mouth through a tube.

At the beginning of the disease my course is to administer a cathartic; if bowels are constipated. Not a purgative containing calomel, as recommended by Dr. Aitken, although in some cases I might not object to combine calomel with other purgative medicines. Then, if there is fever, which there is apt to be, I prescribe a febrifuge; and as such I not unfrequently prescribe chlorate of potash. Right here I will state, that I have seen it stated that ~~the~~ too prolonged use of this medicine, or excessive doses of it, sometimes excites a fatal nephritis. However, I have never seen any ill effects from it after employing it from thirty to sixty hours. The doses given are from two to five grains in solution. I think this remedy can be used with advantage in conjunction with quite minute doses of the tartrate of antimony—say from the fortieth to the sixtieth grain. In such minute doses antimony will not be found to be a depressing agent by any means. It seems merely to act upon the skin. Such a prescription, similar to the following, is not an infrequent one with me:

Ry. Antim. et Potass. Trt. gr. ss.

Fl'd Ext. Belladon. f. ʒss.

Potass. Chloratis. ʒj.

Syr. Simp.

Aq. Destill. } aa. f. ʒiiss.

M.

A teaspoonful of this every two hours would be proper to a child six years old. To a child two or three years younger I would lessen the amount of fl'd ext. belladon., or substitute the tincture.

On examining the throat and discovering a pellicle easily reached, I would touch it and the surrounding parts with the solid nitrate of silver. Subsequent treatment, that might be deemed necessary, would depend upon the course of the disease and symptoms presented. Every case must be treated with reference to itself.

I have made use of quinine and small doses of ipecacuanha as a febrifuge with satisfactory results. Quinine

is a well-known tonic and antiperiodic; but it is also a sedative and febrifuge in what is termed large doses. As a tonic, when a tonic is needed in the affection, it will receive the preference to any other.

Too great care can not be used to have the patient under the best possible hygienic circumstances. The room should be well ventilated without exposing the patient to cold. The bed-clothing should be kept clean and frequently changed. Cloths containing secretions from the mouth and nose should not be permitted to carelessly lie around, but should be burned. Only those individuals whose presence is needed should be allowed to enter the sick-room; and children especially should be kept out.

Some physicians are in the habit of having shallow vessels, containing some disinfectant, placed about in the room for the purpose of keeping the room disinfected. This I consider absurd. No real disinfection can take place under such circumstances. It has been found by actual experiment that to disinfect a room, fifteen by twenty feet, and ordinarily high, requires many pounds of carbolic acid in solution and sprinkled over its floor and walls. To destroy bacteria in a test tube will require far more effort than would be thought. Some think that where there is an odor of a disinfectant morbid germs, bacteria and micrococci can not preserve their vitality, but it is a mistaken notion. The best mode to disinfect a room is to remove its furniture to the open air, and then thoroughly ventilate it. Tightly closing a room and keeping it filled for some time with thick fumes of sulphur will, next to ventilation, be efficient in disinfecting.

A Case of Morphia Poisoning.

BY W. R. AMICK, M. D., CINCINNATI, O.

Miss N. W.—, aged twenty-four, had been suffering with rheumatism for two or three days. Towards evening, on the 22d of February, the pain gradually ceased in the various joints that were affected, and as gradually centered in the inferior maxilla. Various applications were made during the night without relief. In the morning, about half past five, the pain increasing, she went to

a bottle containing sulphate of morphia (P. and W.), and took about one-half a grain, approximating it from her description. Half an hour later she asked her aunt to give her a hypodermic injection of morphia, as what she had taken did not do her any good, and the pain was becoming almost unbearable. Accordingly, her sister administered, as near as I could learn, between a quarter and a half of a grain of the salt hypodermically. About an hour later she complained of an itching sensation all over the body, and would scratch herself like as if she would lacerate the integument. This lasted for some time, and then she began to complain of being chilly, and sick at the stomach. I saw her first about 8 A. M. She was restless; alternately warm and chilly, and had severe headache. Had not slept any, but appeared to be in a half stupor. Pupils the size of a pin's head; pulse, 58; respiration, 12; voice inclined to be croupous. Would become nauseated whenever anything was taken into the stomach. Had vomited some. Says everything appears to be enveloped in a mist, and can see nothing distinctly. Gave her brandy, bromide of potash and strong coffee, and she was to be kept awake by shaking and moving her. Left word that I wanted to be notified in an hour if she did not get better.

When I saw her the second time her condition was as follows: Pulse, 46; respiration almost impossible to be taken correctly, as she would cease to breathe unless shaken, but did not exceed six per minute. Prolabia would become very livid when she was left undisturbed for a short time, the ears having a peculiar drawn down appearance. Pupils about the size of an ordinary newspaper period, or a mere dot. Did not respond to light and shade. Coma marked, and it required considerable effort to arouse her, and then she would immediately relapse. Voice very hoarse and croupous, with almost a total inability to swallow. The uvula and soft palate, together with the muscles of the larynx, being partially paralyzed. Gave her one-twelfth of a grain of sulphate of atropia hypodermically, and then awaited the result, preventing profound coma by constant moving and shaking. Five minutes after the atropia was administered, the pulse had risen to sixty, the breathing was improving, the pallor began to disappear from the face, and the pupils were about the size of a pin head. Fifteen minutes later, or twenty minutes

after the atropia was given, the pulse had risen to one hundred, and the respiration to twelve, with a marked improvement in the appearance of the face, prolabia and ears, with pupils half dilated.

She was not allowed to sleep any during the day, but if left undisturbed for a short time, respiration would become irregular.

At 5 P. M. she still felt drowsy and inclined to sleep. Pupils about two-thirds dilated; pulse, 86; respiration, 15, with a tendency every few minutes to make a prolonged and deep inspiration and expiration. Still has some difficulty in phonation and deglutition. Becomes nauseated when anything is taken into the stomach.

She was not allowed to sleep for more than a few minutes at a time until about four o'clock the next morning, or nearly twenty-four hours from the time the morphia was taken. From this time on she rapidly recovered. Complained the next day of nausea and of vertigo when she attempted to get up, the latter being very marked and troublesome. Said she did not know anything of what occurred during the day that she was under the influence of the morphia, and never felt the prick of the hypodermic needle when the atropia was given. This was also manifest by her not even twitching a muscle at the time. Did not know that a second hypodermic had been given, until after arriving at consciousness she complained of pain at the site of the injection.

Treatment of the Hair.

From the German of Dr. Pincus.

BY L. R. PEET.

SAID a patient once to me: "I had originally a heavy head of hair, which was naturally so richly supplied with lubricating substance that I very seldom had need to make use of oil or pomatum. By degrees, however, my hair became less abundant and lost its shining appearance. Though the loss of hair was great, actual baldness did not ensue, of which I was apprehensive, only a very perceptible thinness, especially on the crown."

I replied by asking him if he had any suspicion of the cause of the change.

"I don't know that I have any theory to offer," he rejoined. "Several years ago I suffered some from thin blood, also from tolerably severe bowel disturbances. At the same time I noticed an unusual quantity of dandruff. The abnormal condition of the blood and of the bowels passed off, but the excess of dandruff continued. A somewhat protracted, though not severe, headache followed, which has lasted intermittingly until now; but I have at no time been compelled by it to stop work and lie down. All these things, indeed, seem to me too trifling to produce the striking change in the condition of my hair."

"In this you are probably in error. The least of your ailments might be the cause of your loss of hair. Of the patients who require my aid, one in three has a tendency to disease of the scalp. The father or the mother may have thus suffered, and older brothers and sisters may have become prematurely bald."

"Is the tendency resulting in loss of hair always inherited?"

"By no means. If that were so, wig-makers would, indeed, flourish—having more to do than they would have time or strength for. Observation teaches that only a general tendency or favoring condition is inherited. If those things which directly bring on disease of the scalp are avoided, even this tendency may have no definite effect. It is with the hair as with the body in general: One having a strong constitution can be exposed to destructive agencies and sustain no material damage. So may a good head of hair bear much that would destroy hair of a weak sort. To preserve the latter great care must be exercised; and such careful treatment should begin early in life. Breaking out on the scalp in childhood should be seen to more than it usually is. In former times breaking out of the kind was considered a sign of active blood circulation. People were shy of healing it, looking upon it as a safety-valve of nature, which must not be interfered with, for fear of transferring it to some vital organ. We now know that cutaneous troubles are almost always purely local, and should be got rid of as soon as possible. If they continue only a short time they seem to act as stimulants to growth; and the hair may increase in abundance; but if they do not soon pass away, they stimulate the scalp to such a degree

that weakness ensues, which may not, however, show itself in the hair for several years.

In reference to later childhood, I would say that the dressing of the hair by girls, so long as they attend school, is of an improper kind. The time in the morning before leaving for school is generally short; the combing is hastily, and consequently roughly done: many hairs are pulled out. I have sometimes found the hair of girls nearly half pulled out or broken off close to the base. This state of things is rather common among the higher class. Such treatment can not be borne by hair of moderate thickness and vigor. If there is time for braiding or twisting the hair into strands, such a method of dressing is to be highly commended; if time is scant, the hair should be cut short.

For adults I would give the following directions: Many persons habitually brush the hair too often, and with too much pressure of the brush. If one goes over the hair lightly, with a brush, once or twice a day, no harm results; but a vigorous application, for the purpose of subduing to smoothness a rebellious hair, or group of hairs, or to remove every scale of dandruff, can not do otherwise than injure the hair. The present fashion scouts the use of hair-oil, for every lady wants each hair to show, so that the appearance may cheat the eye with the impression that the hair is more abundant than it is; and to produce this effect the hair has to be very roughly handled. A good head of hair will bear this form of abuse; a poor one will not. A strong head of hair is lubricated by the fat-glands provided by nature at the base of each hair; but in the case of even a moderately strong hair this lubrication is by no means continuous. Observant persons are aware that their hair is more abundant in appearance some days than others. Such a condition is sometimes due to a greater amount of moisture on the scalp; to some extent, however, it is due to a deficiency of oil-secretion. Where excessive moisture is the cause, the hair is apt to take on the character of hair that has been boiled. With every increase of dampness the hair seems to swell. If this change is from natural lubrication that is irregular of supply, a very disagreeable thing ensues—the hair splits. That I may not be misunderstood, I will parenthetically state that other causes than the one mentioned may produce splitting.

For this affection there is a remedy at hand: it is only necessary to apply oil daily and for some time.

The question may be asked, whether a fluid oil or a pomatum is the better means. I would reply that there is little difference between the oil and the pomatum. As oil gives an appearance of greater thinness than actually exists, I have frequently recommended the use of pomatum when that kind was procurable which was well prepared, from pure materials, and was freshly made. In case the pomatum is quite thick, it may be inferred that there is a good deal of wax in it, which hinders the oil from reaching the hair to such a degree that the appearance of thinness results. If one wishes to be in the fashion mentioned above, one should select that kind of pomatum which is known to contain a goodly proportion of wax; but it must not be forgotten that with very waxy pomatum the scalp and the hair do not receive perceptible lubrication.

I must recommend, with some emphasis, that both oil and pomatum be used in limited quantities. The fatty substances dissolve very readily, producing what we call rancidness, which is always injurious to the hair. If one wishes to give his oil or pomatum a good smell, the best way is to add a drop or two of cologne to that which he is about to use. If one has to be cautious, he should satisfy himself that the odor is pure—does not proceed from rancidness. The moment one perceives that the oil or pomatum is becoming rancid it should be laid aside.

If one uses a lubricating material, a frequent washing of the head is necessary. Soap-water, honey-water, chamomile-water are the best washing materials one can employ. Many have so little perspiration of the scalp that they require a very limited amount of oil or pomatum; and they have so little dandruff that they need no cleansing material at all. If, however, washing is necessary, it need not take place oftener than once a month, and soap-water may be used. But it must be borne in mind that a too frequent or even abundant application of soap-water may irritate the scalp to such a degree as to do injury. This shows itself by a feeling of stretching of the hair, together with dryness, and occasionally a manifest increase of dandruff. In such a case milder remedies will have to be applied. Honey-water and violet-water I have found excellent. The yolk of an egg is a mild

remedy ; but after employing it, a great deal of water is needed. Having this last in view, the white of an egg gives less trouble, and is just as good. I most approve of the following wash, which every mother has at hand for herself and children. It has the least tendency to irritate. A table-spoonful of clover (almond, wheat or rye-clover) is put in a vessel of boiling water, and steeped for from two to five minutes. The water is then strained through a piece of linen, and while tepid, or cold, according to wish, applied to the scalp. Sensitive persons should allow a couple of hours for the head to dry. As soon as the hair is perfectly dry, a vigorous application of oil should take place, as after such a washing the hair is in the best condition for absorbing the oil, thus warding off the unpleasant feeling of stretching of the hair.

Such careful treatment of the hair will, in a majority of cases, do much toward preserving it ; but there are diseases which rob one of his hair, let him take ever so much pains to preserve it.

I have already mentioned the causes of injury to the hair, which have effects that may show themselves through life: breaking out upon the scalp, and rough treatment, especially by girls. So far as local trouble is concerned, it is highly probable that, later in life, a rough manner of dressing the hair, too heavy a covering for the head, a bad-sitting helmet, blows on the head (as in students' duels with foiled swords), may injure naturally weak hair. Still more questionable is the practice of daily shower-baths. I myself, and many of my patients, owe the premature loss of our hair to such application of cold water to the head. Even the mere frequent washing of the hair with cold water may result in rapid loss. I make this cautionary remark having in mind the course pursued at our water-cure establishments. The daily use of the shower-bath, especially in early manhood, affects the hair very deleteriously. If such baths are unavoidable, the head should at least be protected from the cold water, either by holding the head entirely out of the range of the falling water, or by wearing a cap made of wax-cloth.

It does not seem to occur to most people that injuries which have to do directly with the scalp will inevitably affect the hair. Still less does it occur that even the injury of organs at a distance from the scalp may, through the influence of the nerves, work perniciously upon the

hair. But this assertion labors under no doubt whatever; and any who will closely consider their own experience, or that of their acquaintances, will soon be able to cite many confirmatory instances.

In view of the first-mentioned cases, I can not too urgently impress upon parents and educators to watch over the development of their children or pupils. At the time when the boy becomes a youth and the girl a maiden; when a series of emotions, till then undreamt of, takes possession of them and gives the imagination a concentrated direction and a lively coloring: at that time much of the freshness of life may be lost, much evil engendered: among such evils may be the decided lowering of the tone of the hair, which may not, probably will not, show itself at once, but in after years will certainly become manifest.

Among diseases peculiar to the bowels, acute inflammation affects the hair in the matter of color. Very many cases of premature grayness are attributable to that cause. Chronic affections of the stomach and bowels, in the form of catarrh, generally have a very bad effect upon the hair. Continuous irritation of the liver, also loss of physical vigor, resulting from persistent bowel trouble, injure the hair.

It is constantly asserted, and as constantly controverted, that diseases of the nerve-centers, especially of the brain, work ill to the hair. I find my observations confirming the assertion. Long-continued mental labor, violent emotional excitement, kept up for some time; silent sorrow, persistent vigilance at night—and these are affections of the brain—are injurious to the hair. Now, as sorrow, care and excitement are a part of human life, and can not well be got rid of, and as I would by no means counsel the avoidance of mental exertion, in order that the hair may be preserved, it remains to be considered that a vigorous body may bear a good deal of hard usage, and that the hair of such a body will also bear much. In case there is weakness, not all mental exertion, but all over-exertion should be as far as possible avoided; then if baldness or premature grayness ensues, one must be resigned to it, striving, however, to strengthen the whole system.

I will advise all to learn what tends to produce chronic disease of the hair, and scrupulously to avoid it. One

important way of ascertaining whether the hair is suffering from disease is to count those which drop or are combed out. It is a very tedious thing to do, but will recompense the trouble. In long hair, never more than one-fourth should measure less than six inches. As soon as the counting makes apparent that some remedy should be applied, this may be employed: take from two to four grains of double-oxide of natron, and mix with twelve tablespoonfuls of distilled-water, or rain-water filtered through full'd linen; then, in case of great sensitiveness of the patient, apply on two successive days in the week two tablespoonfuls of the mixture, using a soft brush or small piece of sponge, rubbing it in thoroughly, but not roughly. If the patient be in normal bodily condition, the remedy may be applied three or four times a week, especially on the fore part or the middle portion of the head, as those are most apt to be affected. And let the fluid be so put on that as much as possible may reach the scalp. To do this, where the hair is long, several strokes of the comb, laying partially bare strips of the scalp, should be made. After the rubbing in, a dry cloth should be carefully and repeatedly pressed upon the head, and for an hour or two there should be no exposure to the cold. The fluid may be applied at any time of day that is most convenient. During the remaining days of the week the hair may be dressed as usual. On the first day after the application of the fluid, a little oil, which by smelling is ascertained to be pure, should be rubbed on the hair. In the course of a few weeks it will be found that there is less loss by dropping out. If not much difference is seen, or if there is a return of the disease, the remedy may be used for two or three months. After the first month the frequency may be reduced one-half. In case there is unusual formation of dandruff, a tablespoonful of the best glycerine may be added to the fluid. Of course one must avoid all direct and indirect causes of injury to the hair.

Some of the remedies which I have recommended will alter the color of the hair; but as the hue given is a pleasing brown, few will be likely to object on that account.

If a regular physician tells the patient that he can not cure him, the latter should not have recourse to quacks who promise everything, for it may be taken for granted that the diplomaed physician, though treatment of the

hair be not his specialty, is sure to know more about the functions of the scalp, and about agencies of all kinds that act perniciously on the hair, than a layman who may have read a few medical books and has a hair-fluid for sale.

VALAHA, Florida, March 8, 1881.

Apoplexy or Cerebral Hemorrhage.

Prepared for Cincinnati MEDICAL NEWS.

APOPLEXY or cerebral hemorrhage is due to the rupture of a blood-vessel, and the consequent extravasation of blood either into the substance of the brain or into its ventricles.

To give the student a more correct idea of the nature of apoplexy, I will quote here from Aitken on the pathology of the affection: "The disease was well known in the Greek and Roman schools of medicine, and is of too frequent occurrence, and of too striking a character, to have escaped observation even in the rudest ages of society. Patients have died with undoubted apoplectic symptoms when nothing has been found but congestion of the vessels of the scalp, of the membranes of the brain, and of the brain itself, but without extravasation of a drop of blood. More generally, however, a greater or less quantity of blood has been effused either into the cavity of the arachnoid, into the substance of the brain, or into some of the ventricular cavities. Thus it is that the lesions found in cases which die of undoubted apoplectic symptoms vary very much. Sometimes the evidently congested state of the brain during life leaves no trace visible after death. Such cases have been described as 'nervous apoplexy.' Although much stress is laid upon the fact that 'a sudden pressure upon the brain is necessary to produce the apoplectic state,' yet it is difficult in all cases to account for the proximate cause of the disease by such an explanation; for when the quantity of blood extravasated has not been larger than a barley-corn, it is difficult to account for all the phenomena by mere pressure. When the quantity of blood extravasated is small, the disease is seldom fatal from the first attack; but the rapidity of the fatal issue appears to bear some relation to the vicinity of the hemorrhage to

the *medulla oblongata*; and the effusion of blood into the ventricles is also generally most rapidly fatal. . . . If death takes place soon after a hemorrhage into the brain, the substance of the brain has no other appearance of disease than that of being flattened from the pressure of extravasated blood. If the patient survives a few days, the membranes show marks of inflammatory action. They are infected, thickened, and although dry and pitchy-like in the immediate neighborhood of the clot, have yet some serum effused in other parts of the space they inclose."

Two forms of the affection, differing essentially only in the extent or seat of the lesions, but presenting different symptoms, are to be distinguished; these are the *apoplectic* and *paralytic*. In the first, there is loss of consciousness; in the second, the mind, though perhaps impaired, is not suspended in its action.

SYMPTOMS.—Before the full development of the attack there often is, for several days, a group of symptoms present which indicate cerebral disorder. These are very much of the same character as those denoting the first stage of cerebral congestion, but, though generally not so numerous, are far more striking.

Among the more obvious is a sudden difficulty of speech arising from slight paralysis of the tongue and other muscles concerned in articulation. Words are not pronounced with the usual distinctness; the tongue seems to occupy more space in the mouth than it should, and is not moved with the requisite degree of promptness and rapidity.

Defects of sight may occur, usually characterized by the presence of dark spots in the axis of vision. Such difficulties are due to minute extravasations in the retinae, and are always of serious importance.

Bleeding from the nose is a common precursor, and when occurring, says Dr. Hammond, without being increased by severe muscular exertion, blows, a dependent position of the head, or other obvious cause in a person over the age of 40, is always to be regarded as a symptom of moment.

Numbness limited to one side of the body is of itself sufficient to excite apprehension. It may be present several days before, or may precede the attack only a few minutes.

In addition there may be headache, vertigo, slight confusion of mind, a tendency to stupor, and vomiting.

None of the premonitory symptoms may be present, and then the attack, if of the apoplectic form, occurs with great suddenness. Even if they have been noticed, there is more or less abruptness in the onset.

Thus the individual is perhaps standing engaged in conversation, when he is instantaneously struck with unconsciousness, and falls to the ground as if shot; sensibility and the power of motion are abolished, and no signs of vitality are apparent to the ordinary observer, with the exception of the slow and labored action of the heart and respiratory muscles. The breathing is stertorous, the lips and cheeks are puffed out with each expiration, and the pupils are generally largely dilated and insensible to light.

Reflex movements are abolished at first, but after a few moments they reappear, and are even more readily excited than in health, owing to the fact that the controlling influence of the brain is removed.

The urine and feces are often evacuated involuntarily.

An apoplectic attack of this character frequently terminates in death without the patient recovering his intellect in the slightest degree. If life should be prolonged for thirty-six hours, the probability of a fatal termination is materially lessened. Prof. Hammond says that he has never seen a case that was instantaneously fatal, but admits the possibility of such an occurrence. Among the reports of several thousand *post-mortem* examinations at Guy's Hospital, there was but one in which death was asserted to have been instantaneous, and that was a case of meningeal hemorrhage.

In very many cases attended with complete loss of consciousness, the course of the disease is not so rapid as in those just described. The patient falls, is comatose, breathes stertorously, and presents a similar general appearance, but after a time consciousness begins to return, and it is possible to partially arouse him from the condition of insensibility. He turns over in the bed, though with difficulty, and may attempt to speak. Articulation, however, is indistinct, for the muscles of one side of the face are paralyzed, and the tongue, from a like cause, is restricted in its movements. The paralysis is found to exist in the limbs of the same side, and in-

volves the loss of sensibility, as well as of motion, though rarely to the same extent. In some exceedingly rare cases, perhaps not clearly understood, the paralysis of the limbs is on the opposite side to that of the face.

The facial paralysis presents several points of great interest in a diagnostic point of view. The affected side is incapable of expression, but, so long as the patient does not attempt any facial movements, scarcely any distortion is perceived. Should he endeavor to open his mouth to spit or puff out his cheeks, the paralysis is at once perceived. Owing to the fact that the antagonism of the muscles is destroyed, the face is drawn toward the sound side, the angle of the mouth being slightly depressed. It is remarkable, however—and the fact is of importance as a diagnostic mark between the facial paralysis of cerebral hemorrhage with hemiplegia and the simple facial paralysis from injury or disease of the eighth pair—that the patient does not lose the ability to close the eye of the affected side.

If the fifth pair of nerves is involved in the lesion, sensibility is impaired, which is never the case in simple facial paralysis, and the masseter and pterygoid muscles, which receive their motor influence from this nerve, will consequently be paralyzed. The ability to masticate on the affected side is therefore lost, and the cheek hangs lower than on the sound side.

The tongue is also paralyzed upon one side. When, therefore, it is protruded from the mouth, the point deviates toward the paralyzed side, owing to the uncompensated action of the sound genio-hypoglossus.

All these paralyses occur on that side of the body opposite to the seat of the lesion. The muscles are relaxed ordinarily, though sometimes they are in a state of tonic rigidity. Generally, however, rigidity, when it exists, is in the muscles of the non-paralyzed side.

The temperature of the affected side, as determined by the thermometer placed in the axillæ, is at first higher than on the sound side, but at a subsequent period it becomes lower.

Another phenomenon is sometimes observed, and that is the rotation of both eyes toward the sound side. This is accompanied by a like movement in the head, so that, if the patient is paralyzed on the left side, the eyes and the head are turned to the right, and consequently, as the

patient lies in bed, the right side of the face rests on the pillow.

Reflex movements can always be excited, especially in the lower extremity, by tickling the sole of the foot. Deglutition, though imperfect, can generally be made to take place by reflex action unless the hemorrhage is in, or in the vicinity of, the *medulla oblongata*.

In the less severe apoplectic form of cerebral hemorrhage, the urine and the feces are sometimes passed involuntarily from paralysis of the sphincters, and are at times obstinately retained from paralysis of the bladder and abdominal muscles.

Such is the first stage of an attack of cerebral hemorrhage marked by apoplexy and paralysis, as ordinarily observed when amendment takes place. We find that there is a second stage characterized by different symptoms. It may begin at a variable time after the occurrence of the extravasation, usually not later than the eighth day. This is the period of inflammation. It is marked by febrile excitement and pain in the head, the latter being often very severe. There is gastric derangement, as evidenced by nausea and vomiting; and convulsive movements of the limbs, with contractions of the flexors of the paralyzed side, are generally present. Delirium is also a prominent feature. Sometimes there is obstinate wakefulness, and at others a strong tendency to coma. This stage may last three or four days, or at most five or six, when it either causes death by extension of the inflammation from the immediate vicinity of the lesion to other parts of the brain, terminates in the formation of an abscess, or gradually ends in resolution, with abatement of the symptoms.

With the cessation of the inflammatory action, the improvement of the patient becomes very marked. His speech is every day more distinct, his mind more active, his paralyzed limbs more capable of motion. Usually the leg recovers power with much greater rapidity than the arm, and thus the patient is able to walk tolerably well before he can raise his arm from his side, bend the elbow, or extend the fingers.

In the upper extremity there is almost invariably a disposition toward contraction of the pectoralis major and minor muscles, by which the arm is drawn across the front of the thorax. The elbow is slightly flexed, the

wrist bent upon the forearm, and the fingers drawn in toward the palm of the hand. These actions may, in a great measure, be prevented by appropriate treatment, and they may vary in extent according to the gravity of the attack. It is a curious fact that the muscles of respiration are never paralyzed in cerebral hemorrhage unless the medulla oblongata be involved.

Trousseau has insisted that when the arm regains power before the leg, the termination is always fatal. That this is the general result there is no doubt; but it is not always the case.

Now, with all these troubles of motility, sensibility may likewise be affected to a greater or less extent. When this is the case, the limbs of the affected side at first feel heavy as if made of lead, and after awhile numbness, as exhibited by a feeling as if ants were crawling over the skin, or water trickling over it, as if pins and needles were sticking in it, or as if that part of the body were "asleep," is noticed. Sometimes the sense of touch is greatly lessened, while the ability to feel pain is scarcely impaired, and indeed is often considerably increased. Again, there may be hyperesthesia of the skin of the affected regions, and pain along the course of the nerves.

The circulation is inactive in the paralyzed limbs, and this, together with the deficient nervous power, tends to cause a permanent reduction of temperature. The difference may amount to as much as five or six degrees, and, as the ability to resist cold is diminished, the patient is obliged to use additional covering on the paralyzed members. From continued disuse, atrophy of the paralyzed muscles always takes place unless suitable treatment be begun at an early period.

Thus far we have only considered those attacks of cerebral hemorrhage which are accompanied with unconsciousness. One other form requires notice, and it is, perhaps, the one most frequently met with. It differs from the attacks just described, in the important fact that it is unattended with unconsciousness.

SELECTIONS.

The Relation of Lupus to Tuberculosis.

BY PROF. MAX SCHUELLER, GREIFSWALD.

(Centralblatt für Chirurgie No. 7, 1881.)

IN an article on lupus of the conjunctiva, P. Baumgarten incidently discusses the relation of lupus to tuberculosis, and arrives at the conclusion that a sharp line of distinction must be drawn between the two diseases. His convictions rest mainly on the histological appearances of lupus (conjunctival and cutaneous) which, in his opinion, vary in many respects from tubercular tissue changes. In the first place, lupus tissue does not have a tendency to undergo caseation, which is, on the other hand, a characteristic feature of tuberculosis. Then lupus granulations quite often enclose irregularly distributed giant cells, a condition which Baumgarten did not observe in tuberculosis. Again lupus tubercles are very vascular, while true tubercles, on the contrary, are distinguished by the absence of vessels. Baumgarten lays stress moreover on his observations of the direct transformation of lupus into cicatricial tissue, while "the formation of connective tissue must be regarded only as an episode in the structural history of tubercle." Finally, the lupus granulation possesses the "faculty of undergoing direct suppuration," which tubercle has not.

Laying aside, for the time being, the conclusions which B. has deduced from this analysis, we may regard his criteria of lupus and tuberculosis as in the main, well drawn. They are, however, correct only in so far as they apply to tuberculosis not in process of development, but when it has attained a more or less advanced age, when the typical tubercular tissue changes have been entirely completed. One may readily become convinced of the fallacy of B.'s points of difference by studying the tubercular tissue changes in the first stages of their development, for which purpose, in the human being, nothing is more suitable than tuberculosis of the synovial membrane in its early stages. Early resections enable us to prosecute the study of the first stages of the tubercular alteration much more frequently than we can by a *post-mortem* examination of other organs, especially the lungs. In synovial membrane I have very often found changes of

structure which coincide in every particular with those which Baumgarten regards as typical of lupus. One finds here, when the disease belongs to the so-called pannous variety (not in all cases, but frequently enough), enclosed in very vascular granulation tissue, the perfectly characteristic giant cells of Langhans, often in astonishing numbers, besides tuberculoid formations (epithelioid and giant cell tubercles) without a trace of caseation. It would not occur to anybody to regard those alterations as synovial lupus and not as commencing tuberculosis, for not only may symptoms of general genuine tuberculosis follow, but tubercles which have undergone caseous degeneration may be found in the adjoining structures; besides true tuberculosis may be set up in rabbits by the inoculation of fragments of the diseased tissue (into the anterior chamber of the eye).

The changes just pointed out, which I look upon as a form of early tubercular inflammation, I have sometimes found in synovial membrane associated with well-marked cheesy tubercular foci in the underlying bone: the latter had evidently occasioned a gradual secondary infection (Gewebsinfektion) of the synovialis. In other cases the above-mentioned changes were present only in the synovial membrane, and were the sole indications of a commencing tubercular inflammation. While caseous degeneration is in general characteristic of tuberculosis, it is, in my opinion, a later and secondary change, for the parts that have undergone the metamorphosis are such as are the seat of a specific tubercular inflammation, and are at the same time product and matrix of the tubercular inflammation. This inflammation necessarily precedes the cheesy process. Now, it is true that caseation often follows very closely on the heels of tubercular inflammation, but in other cases it is deferred for a longer or shorter time, and occasionally it does not set in at all. I have, in a previous paper, explained in detail the reasons why I can not accept the theory of insufficient nutrition being the cause of the cheesy degeneration of tubercle: I am more inclined to attribute the change to the continued and deleterious influence of the tubercular virus present in the foci of inflammation. Just as this noxious agent primarily sets up tubercular inflammation, in the same way, at a later period, it induces caseation. The early or late appearance of the latter depends, *ceteris paribus*,

upon the intensity and duration of influence of the tubercular noxa. But I believe that the nature of the affected tissues also exercises some influence in this respect. The absence of caseation can of itself certainly not disprove the tubercular nature of lupus tissue changes. Moreover, Volkmann and Thoma have observed cheesy metamorphosis even in cases of lupus, which cases, however, Baumgarten has, for this very reason, assumed to be not lupus, but rather tuberculosis of the skin. The previously described character of commencing tuberculosis of synovial membranes shows that vascularity and the presence of large numbers of giant cells enclosed in a granulation-like tissue are not sufficient to differentiate tuberculosis from lupus.

We see, then, that the histological peculiarities of lupus are not sufficiently marked to distinguish the disease histologically from tuberculosis. That the remaining criteria which Baumgarten has advanced are also not conclusive, I shall now proceed to demonstrate. Baumgarten adduces the negative results of inoculations with lupus tissue as argument to prove the correctness of the distinction which he makes between lupus and tuberculosis, evidently having in view Cohnheim's unsuccessful attempts to set up tuberculosis of the iris in rabbits, after transplanting the lupus tissue into the anterior chamber of the eye. My own experiments in this direction have, however, been successful. It is true that Baumgarten tries to diminish their conclusiveness by intimating that it is doubtful whether I actually employed ordinary lupus products or only pseudo-lupus tubercles, since "Schueller has not mentioned an exact histological examination of the lupus masses which he made use of." The doubt is the more unjustifiable, because, in the essay to which Baumgarten alludes, I did not state whether the specimens were examined histologically or not. Besides, in that paper, the inoculations with lupus were only incidentally alluded to; they were described at length in the book to which I have previously alluded (*Origin of Tubercular Inflammation of the Joints, etc.*). While my successful inoculations with lupus material have been but few, they still demonstrate with sufficient plainness that there exists a close genetic connection between lupus and tuberculosis. I would like to add that the specimens had been thoroughly examined histologically, and all exhibited the fea-

tures which Baumgarten himself recognizes as belonging to genuine lupus. My methods of inoculation, which partly differ from Cohnheim's only as regards the seal of their application, can surely not diminish the conclusiveness of the results of my experiments, especially as these were carried out with the most minute precautions against accidental contamination with tubercular substances from the surrounding of loc. citat. If the engrafted material contain really active tubercular virus, the intensity of the subsequent morbid process may vary with the site of the inoculation, but the result must be essentially the same, no matter where the inoculation be practiced. I acknowledge that the anterior chamber of the eye for these purposes offers numerous advantages, the most prominent being the facility with which one can actually see in loco the daily progress of the morbid process. You easily comprehend why this method was not suitable for my purposes. My detailed communications show that my own experiments with primary and also with cultivated lupus material were often unsuccessful, besides giving the reasons to which I attribute my own and perhaps also Cohnheim's previous failures. Inoculations with tubercular synovial tissue are sometimes beset with similar difficulties. The introduction of such tissue into the anterior chamber of the eye, when it was first practiced, also failed to set up tuberculosis of the iris. I am of the opinion that continued trials with lupus substance, carried on after this method, will also yield positive results. Thus, Prof. Hueter was recently so fortunate as to succeed in producing well marked tubercles of the iris by transplanting a fragment of lupus tissue into the anterior chamber of the eye of a rabbit. Their development was, it is true, feeble and long delayed and the general condition of the animal was only temporarily disturbed. In my own experiments with lupus inoculations, I have also observed the relatively late appearance of the tubercles, and the comparatively light, often transient, nature of the general symptoms, as well as their utter absence occasionally.

We see, then, that we may with propriety look on lupus as a species of tuberculosis, which doctrine Friedlander has already maintained because of his histological examinations. However, only experimental researches are to be regarded as convincing. These demonstrate

that the tissue of lupus actually contains the same virus which is active in tuberculosis; only we must assume, from the recognized histological and clinical peculiarities of lupus, as also from the results of inoculation, that in lupus, either a primarily weaker tubercular virus is present than in other tubercular affections, or that its potency is lessened and the intensity of its specific action weakened by the tissues through which it penetrates, as for example the skin and subcutaneous connective tissue. Consequently caseation develops less extensively, and occurs more seldom in lupus tissue, and may never take place. The rarity of general tuberculosis in patients affected with lupus is very simply explained by this supposition. One might assume that the tubercular inflammation in lupus remains permanently, so to say, in a comparatively incipient condition, if we are content to recognize, as I think is necessary, that the alterations of the tissue structure in synovitis tuberculosa pannosa such as I have already described, and the similar alterations of lupus are a form of beginning tuberculosis. The relatively slight intensity and the diminished specific potency of the tubercular virus in lupus, allow agents which tend to incite suppuration to unfold their influence more readily, and thus lead to suppuration in lupus tissue. The same property finally will allow of a relatively greater facility of rehabilitation, of a spontaneous cure of lupus (cicatricial foci), and so on. Volkmann's observations of the occurrence of cutaneous lupus plaques of tubercles in underlying bones and lymphatic glands, which we, too, can substantiate, harmonize very well with these views. In such cases, which are not at all rare, caseation is, as a rule, absent (as Baumgarten also noted in one of his patients), or may set in at a very late period. There is no conclusive ground for separating such forms from lupus as Baumgarten does. In my opinion, they readily admit of the explanation that in these cases lupus developed because the tissue through which the tubercular noxa penetrated is diminished in its activity through conditions as yet unknown to us. Besides it is well known that this virus may attack the skin with unimpaired specificity. When this happens the site of the disease is usually the surface of an already existing ulcer, mucous membrane being affected more frequently than the skin. In connection with our views, it is inter-

esting to note that tubercular inflammation of the skin rarely assumes a progressive character except it be under the appearance of lupus. I will not discuss here the conditions of development of lupus, as my views and observations on this subject have been detailed at length in my book to which I have so frequently referred (Section G 2, "Lupus, Skrofulose, Tuberculose").

The question, "Is there such a thing as syphilitic lupus?" clinical teachers have usually answered affirmatively. Up to the present time I have seen no ground for denying this. I have myself observed lupus in some few subjects of inherited syphilis, but whether this so-called syphilitic lupus is dependent upon the syphilitic virus, or whether it springs from a secondary tubercular infection of the skin, only experimental inoculations can decide. As syphilitic lupus (at least within the sphere of my observation) is usually noticed only in the final stages of inherited syphilis, the possibility of a secondary tubercular infection is very admissible. At the same time I should not find it difficult to assume that the syphilitic virus might, under certain conditions, engender an affection of the skin externally similar to that lupoid alteration, which is more often the result of the influence of the tubercular virus. A case of so-called syphilitic lupus, at present in our clinic, will afford me the opportunity of investigating these questions through the medium of experimental inoculations.

Cardiac Remedies and Diseases.

THE following is an abstract from the Cartwright Lectures, on the Physiological Antagonism between Medicines, and between Remedies and Diseases, by Roberts Bartholow, M. D., Professor of Materia Medica and Therapeutics in the Jefferson Medical College, Philadelphia:

The most exact antagonism has been shown to exist between remedies which act especially on the heart; and we shall now see that there is a similar exactness in the antagonism between remedies and diseased conditions of the heart. If the action of the heart is excessive from a diminution in the energy of the inhibition, we have agents which oppose this state. In that curious affection, exophthalmic goitre, the action of the heart is constantly

much too rapid, and is not infrequently excessively accelerated from the diminution in the inhibitive control of its movements, while the carotid artery and the vessels of the thyroid gland are relaxed and dilated. If the malady is treated by the antagonists to such a condition of the heart and vessels before structural changes occur, it is usually small; and these remedies are galvanism (applied to the pneumogastric and cervical sympathetic), digitalis and ergot, which increase the inhibition and vascular tension, and thus substitute a slow and regular movement for the wild disorder of the disease. In some affections, such a strong inhibitive influence descends along the pneumogastric that the heart is restrained and its movements greatly retarded; or, again, the heart may be slowed by agencies paralyzing the accelerative apparatus or the motor ganglia. The excess of inhibition is overcome by such an agent as aconite, which depresses the functions of the inhibiting nerve; while the paralysis of the accelerator apparatus is overcome by the stimulants of the motor ganglia, such as atropia. Palpitation proceeding from irregular and explosive discharges of nervous force coming from the accelerator nerves is best controlled by such an agent as bromide of potassium, and palpitation resulting from paroxysmal loss or depression of the inhibition by such an agent as digitalis. The most important antagonist to states of depression (provided certain conditions are observed), is, undoubtedly, digitalis; but I am convinced that the employment of digitalis in the treatment of cardiac weakness is frequently carried much too far. Digitalis increases the inhibition, slows the heart by lengthening the diastolic interval, stimulates the heart-muscle, and facilitates the passage of blood into the coronary artery by increasing the force of the recoil, while it also raises the arterial tension. Long continued medicinal doses, however, as well as lethal doses, have been proved to exhaust the irritability of the apparatus on which the action of the remedy is exerted; and the practical deduction is, therefore, that digitalis should be given in moderate doses, and not too frequently, on account of the prolongation of its effects. In the condition of the fatty heart the use of this agent is more than doubtful, owing to the fact that it decidedly increases the arterial tension, and thus imposes additional labor upon the heart. With mitral

lesions the heart is weak and acts quickly (from relaxation of the inhibition), the arterial system has relatively much less, and the venous system much more, than the normal quantity of blood; the arterial tension is low, and the nervous tension too high. Hence, digitalis, as it opposes these conditions, if employed in the proper manner, is indicated, and can be used with advantage; but, as may be inferred from what has just been said, if it is given too frequently or in too large doses, it will cease to antagonize the symptoms on account of which it was prescribed.

The antagonism between remedies and diseases is well shown in the medicinal treatment of aneurism. If the blood-current is slowed, and the caliber of the peripheral vessels diminished, the blood may be caused to coagulate in the sac, when the clot may organize, and a cure, perhaps, be effected. When Langenbach learned of the success of Hilderbrandt in treating urine fibroids by the hypodermic injection of ergot, he determined to make a trial of the same means in the case of aneurisms. His idea seems to have been that ergot, by causing contraction of the muscular fiber of the aneurismal walls, gradually compressed the sac, and thus effected a cure. It has been urged, accordingly, that ergot injections could be of no service in aneurisms of the aorta, since the latter has no muscular coat; but those raising this objection seem to have forgotten the important fact that the solidification of the sac is produced by the coagulation of the blood within it, as well as that the conditions most favorable to such coagulation are a slow action of the heart and increased tension at the periphery, both of which result from the injection of ergot.

In the arrest of hemorrhage the same principles of antagonism are depended upon. No one now thinks of trusting to opium, acetate of lead, tannin, sulphuric acid, and the medley of ancient astringents. Modern pharmacological research has placed in our hands the most efficient remedies for hemorrhage, which are agents whose action is antagonistic to the conditions from which the hemorrhage results. These conditions are increased action of the heart and relaxation of the vessel walls, and the most efficient remedies in antagonizing them are ergot, digitalis, bromide of potassium, veratrum viride, etc. In arresting pulmonary hemorrhage the subcutaneous injec.

tion of ergotin is the most prompt and certain means at our command, while menorrhagia is usually more speedily arrested by bromide of potassium. These remedies may be given in combination with good effect: bromide of potassium and digitalis by the mouth, and ergotin subcutaneously. The application of cold and heat for the purpose of arresting hemorrhage is based on the same principle. The first effect of cold is to cause prompt contraction of the arterioles; but this is followed by their relaxation. Heat, on the contrary, first causes relaxation, and subsequently contraction—the latter being more energetic than that which is primarily caused by the application of cold.—*Medical Record*, December 18.

Primary Cancer of the Liver.

DR. EWART gives the histories of four cases (*British Medical Journal*, Sept. 25, 1880), for the sake of drawing attention to some points bearing upon its diagnosis. An early diagnosis is important, inasmuch as it may be the means of saving the patient from much harassing and drastic treatment. The difficulty of making a diagnosis is enhanced by the facts that primary carcinoma of the liver usually begins painlessly in the substance of the organ, and that it may attain considerable dimensions before attention is attracted to it. In the first three cases cited it probably existed some time before the glands in the portal fissure became sufficiently enlarged to cause jaundice by compression of the ductus communis chole-dochus. There is reason to believe that the obstruction of the duct is effected insidiously, gradually and painlessly. Especially is this accomplished with freedom from pain when the cystic duct is also occluded simultaneously, or soon after the closure of the common duct. In this way the channels behind become, in a measure, reconciled to an excessive accumulation of bile; the urine becomes dark-colored, carrying off the bile absorbed for some time prior to the date of complete obstruction, and so preventing the outward manifestation of jaundice. When the occlusion is perfected, jaundice makes itself apparent in twenty-four or forty-eight hours, and persists, with an intensity increasing in proportion to its subsequent duration, during the brief remainder of the patient's

life. When the cancer growths approach the surface, causing intense tension of the capsule and irritation of the superjacent peritoneum, pain is doubtless produced. But enormous enlargement may take place without pain or tenderness being complained of. That a large portion of the parenchyma of the liver may be destroyed gradually and painlessly is demonstrated in the case of large hydatid cysts, centrally situated; yet a sufficiency of bile is secreted for the wants of intestinal digestion, the support of the blood, and the maintenance of animal heat; so, indeed, within certain limits, it may be with the invasion of carcinoma. The grand distinction is that, as the growth advances, the malignant or cancerous cachexia is soon developed, with marked and progressive emaciation; and these conditions are much aggravated and intensified if jaundice be present, as is generally the case. It must be recollected that jaundice may occur without pain from enlarged glands due to syphilitic or tubercular growths, or to other causes. The further progress of the case, either toward amelioration or the contrary, will enable the physician to add clearness and precision to the diagnosis during the middle and later periods of life. In most cases, jaundice supervenes about five or six months before death; and, when once developed, it not only never disappears, but becomes more and more marked and intensified. The advent of death is chiefly dependent upon the inability of the kidneys to go on ridding the blood of the bile with which it is being constantly contaminated.—*New York Medical Journal, January.*

Cod-Liver Oil in Phthisis and Bronchitis.

THE value of cod-liver oil in phthisis has more than once been set forth in the *Journal*, and the various attempts to explain its superior therapeutical value, compared with other facts, have been considered. The most probable theory, as we have said, is that which ascribes its remedial action to the readiness with which it is digested and assimilated. We see that this view is taken by Dr. T. Lauder Brunton, in an article in the London *Lancet*, as the following extract will show:

One of the most powerful expectorants is simply a little warm food in the stomach, and in cases of chronic

bronchitis, in which the patients complain of violent coughing immediately after rising, one of the best expectorants is a glass of warm milk, either with or without a little rum, and a biscuit or a piece of bread, about a quarter of an hour before they get up. A little warm beef tea will have a similar effect. After taking this for a short time they generally tell you that the sputum comes away much more easily than before, and they are not so much exhausted by it. But, perhaps, the remedy, *par excellence*, not only in cases of phthisis, but in chronic bronchitis, is cod-liver oil. Persons suffering from long-standing chronic bronchitis will often come to a hospital to beg for cod-liver oil, saying that it eases their cough far more than any cough mixture. Other oils or fats have not this power to the same extent as cod-liver oil. We can not say positively what the reason of this may be, but I think there is no doubt about the fact. My own belief is that cod-liver oil is more easily assimilated than other oils, and not only so, but more easily transformed into tissues themselves. Whether it owes this property to its admixture with biliary substances, or to its chemical composition, we can not say. Dr. Weir Mitchell quotes a remark made by an old nurse, that "some fats are fast, and some fats are fleeting, but cod-liver oil fat is soon wasted." By this she meant that there were differences in the kinds of fat accumulated under the subcutaneous tissues of men, just as there are differences in subcutaneous fats which accumulate in horses. The horse fed on grass soon gets thin by hard work, while the fat laid on when the horse is feeding on hay and corn is much more permanent. Persons fattened on cod-liver oil soon lose the fatness again, and this, I think, points to the power of ready transformation which the oil possesses. Supposing that it does possess this power, we can readily see how advantageous it will be. In chronic bronchitis, and in catarrh and pneumonia, we have a rapid cell-growth, but want of development. The cells lining the respiratory cavities are produced in great numbers, but they do not grow as they ought to do. They remain, more or less, lymphoid cells, instead of developing into proper epithelium. They so rapidly form, and are thrown off so quickly, that they have not time to get proper nutriment, and if they are to grow properly we must supply **them**, not with an ordinary kind of nutriment, but with

one which is much more rapidly absorbed, and is capable of much more rapid transformation in the cell itself than the usual one. This power is, I believe, possessed by cod-liver oil, and to its quality of nourishing the rapidly formed cells in the lungs in cases of bronchitis and catarrhal pneumonia I believe its great curative power is owing.

The Chemistry of Starch.

A RECENT writer on agriculture remarks: "Although man can live upon food which does not contain starch, still it may be said that the daily want of every human being, from the time he can crawl until he goes into his grave, is so much starch; it constitutes the great bulk of the daily food of those who labor in all countries; and it is never absent from the diet of the wealthy, although their table may be covered with dainties furnished from every quarter of the globe." This is no exaggerated statement of the importance of starch as an article of human diet; and if this were its only claim to our consideration it might well deserve to be made the topic of a "familiar science" paper. We shall see, however, that it has other uses and applications of scarcely inferior prominence.

But what is starch? Chemically viewed, it is a compound of carbon, oxygen, and hydrogen, in the proportions represented by the formula $C_{12}H_{20}O_{10}$. This is perfectly the same as that of *cellulose*, or woody fiber, the substance of which the *cells* of all vegetable tissues are made. We could hardly have a more striking example of dissimilar properties with similar composition. Common sugar and gum arabic are another familiar pair of these *isomeric* compounds, as the chemist terms them, both having the formula $C_{12}H_{22}O_{11}$. In such cases, we must suppose that, though the atoms making up the substance are the same, they are grouped or arranged in different ways, and thus gives rise to distinct qualities in the substances.

Starch is exclusively a vegetable product, and consists of round or oval granules, varying in size in different plants from about $\frac{1}{250}$ to about $\frac{1}{3000}$ of an inch in diameter. In the potato, for instance, they are much larger than in wheat.

They are made up of layers, formed successively about a nucleus or center, and lines marking the layers can sometimes be seen on the large grains. As the grains from the same kind of plant are nearly uniform in size and shape, while they vary much in different species, the microscope will show to what plant starch-granules belong, and thus enable us to detect adulterations of arrow-root and other starchy substances.

Starch is insoluble in cold water, but if the water is heated to about 150° F. the grains swell and burst, forming a paste or jelly. If boiled for some time in water, starch is converted into the soluble gummy *dextrine*, another substance having the same chemical formula. The same transformation takes place in baking wheaten bread, the brownish glazing of the crust being composed of dextrine. It also occurs in the process of digestion, the starch being converted into dextrine, and this into sugar, which is yet more soluble and more readily absorbed into the blood-vessels. The saliva of the mouth and the gastric juice of the stomach have little to do with this process, which does not fairly begin until the food has reached the small intestine. The secretions of the pancreas and of the glands of the intestinal walls have the power of acting energetically upon starch. The layers of the granules are successively softened, detached, and broken up, and the transformation into dextrine and sugar follows. The farther on we trace the starch in the intestinal canal, the smaller do the granules become, in consequence of this gradual disintegration and solution.

It is hardly necessary to say that starch forms a large part of the food of all herbivorous animals, especially those that live upon grains, as well as of man.

It is also the first food of the young plant. It is for this purpose that it is stored up by the plant, and we plunder the depository in order to devour it ourselves. The seed, like the egg, contains an embryo, with a sufficient supply of food to "give it a start in life," or to nourish it until it can draw its nutriment from external sources. An admirable provision of nature this, from one point of view; but when we are told that the embryo plant can not feed on starch, what shall we say of it? The hard-shelled insoluble granules are about as well adapted to the dietetic wants of the infant organism as a peck of walnuts would be for those of a new-born babe.

Even the mature plant could do nothing with them, for it never becomes capable of swallowing its food in solid form. The mighty oak or the giant sequoia of the Yosemite, like the most delicate of seedlings, must obtain all its nutriment in liquid or gaseous form. It derives the main part of its sustenance from "the chameleon's dish" of air, and the rest from the water that it drinks in by its leaves as well as its roots. Solid food must reach it, if at all, through one of these channels; but starch is neither volatile nor soluble in cold water; and starch, as we have seen, is only food packed up with the embryo in the seed.

This arrangement, which seems at first glance so absurd, is, however, the best, both for the plant and for its plunderer, man. It enables the latter to store up the seeds until he needs them; and the former also has its food in a form which will "keep" until circumstances are favorable for its development and growth. Besides the starch, the seed contains more or less *gluten*, a compound which heat and moisture easily decompose, converting a part of it into the ferment known as *diastase*. This has the remarkable property of transforming starch into dextrine, and then into sugar, one part of it being sufficient to produce the metamorphosis in two thousand parts of starch. When the seed is placed in the moist, warm earth, it absorbs a little water, which starts this curious chemical process. The sugar formed is dissolved in the water, which the embryo plant sucks up, and turns the sugar into woody fiber. It is thus enabled to thrust a little root into the earth, and begins to draw its food from without. Next it shoots up a little stem, and spreads its first leaflets to the air and light. It now ceases to be dependent on the seed, and feeds no more on starch, though later in life it goes into the manufacture of the article, and stores it up in seeds, as the parent plant had done in its day and generation.

This conversion of starch into sugar is copied by man in the manufacture of glucose, of which we gave an account in the *Journal* for November, 1880, and therefore need not dwell upon the subject here.

The brewer also takes advantage of the natural change in the seed by which diastase is formed. The grain commonly used for the purpose is barley, which is moistened and exposed to heat until it sprouts. When the gluten has begun to be transformed into diastase and the starch

into sugar, the embryo plant is killed by means of greater heat. The *malt*, as it is now called, is next bruised and soaked in warm water, which dissolves out the sugar already formed, and also the diastase. The latter acts on the rest of the starch, converting it into sugar; and the sweet liquid is then boiled, hops are added, and afterward yeast, to produce fermentation. The details of the process would be out of place here, even if we had space for them.

The use of starch for sizing and stiffening cotton and linen fabrics, though of much industrial and domestic interest, is not a chemical process, and therefore does not come within the scope of the present article.

Lung Disease in the Ox; Successfully Treated with the *Hieracium Venosum*.

REPORTED BY W. STUMP FORWOOD, M. D., OF DARLINGTON, MD.

Secretary of the Medical Society of Harford Co.

ALL physicians who have the true interest of their profession at heart, most willingly and gladly receive and accept knowledge and truth from all sources whatever; and, through careful observation, often acquire much valuable information from various forms of disease presented in the lower animals.

During discussion upon the subject of *Phthisis*, at a recent meeting of the *Medical Society of Harford County*, Dr. H. Clay Whiteford related a case of lung disease in the ox, which was quite as remarkable in the peculiar medical treatment, and consequent recovery, as was the singular character of the disease.

The case occurred years ago, before the Doctor had studied medicine; and he was therefore unable to give the exact pathological condition of the animal, but stated the leading points of the case as they appeared to the unscientific persons who had the ox in charge at the time.

The ox was one of a pair that belonged to the Doctor's father during the former's boyhood. The oxen were kept in constant use, with heavy hauling. The driver, who had the daily management of the animals, had observed for some time that one of them appeared to be sick—had a bad cough, and was losing flesh; but while he was still

able to work he did not mention the fact to the owner, who himself rarely saw the oxen, for the reason that they were out at work very early in the morning, and returned late at night. They were employed during that season away from home. It was only after the ox became so reduced by disease as to be incapacitated for work that the owner's attention was drawn to his condition. He was surprised to find him so ill, and so reduced in flesh, and immediately ordered that he be "turned out."

When the ox was finally released from his heavy, daily labor, his condition was truly pitiable. He suffered with a deep, hollow, and almost incessant cough, similar to that of the human phthisical patient, and with almost every cough, large quantities of dark, thick mucus, offensive alike to sight and smell, would *gush* from nostrils and from *mouth*. This discharge was so profuse at times as to threaten suffocation to the animal. He also constantly suffered, as might be inferred, from the most distressing dyspnœa; and, owing either to this cause, or to a want of appetite—probably both—he was scarcely able or willing to take any food whatever. He was a large-framed ox, but now appeared to be reduced to skin and bone. From the appearances presented, Mr. Whiteford, the owner, did not imagine that it was possible for the animal to recover, or even survive longer than a few days. While reflecting as to whether it would not be more humane on his part to relieve the poor animal's sufferings by hastening his death, one of Mr. Whiteford's neighbors suggested to him the use of a remedy that he regarded as of great value in such cases, viz.: a tea or infusion made from the root of the *rattlesnake weed*—the *hieracium venosum*. Without feeling the slightest confidence in the value of *any kind of treatment*, he yet permitted this simple domestic herb to be tried; particularly as the medicine could be obtained most readily, and without price, the weed flourishing in the greatest abundance in the immediate vicinity. Mr. Whiteford had the infusion made in accordance with the general directions given him, without any special regard to the proportions or strength, and by withholding water and other fluids, the animal was induced to drink of it *ad libitum*, two or three gallons daily.

Within a week or two after the commencement of this treatment, the ox, to the great surprise of the owner,

began to show unmistakable signs of improvement: his cough became less frequent, and evidently less painful; the quantity of mucus discharged gradually decreased, and the distressing dyspnœa rapidly subsided. Within three or four months after the institution of this treatment by the *rattlesnake weed*, or *rattle-weed*, and no other remedy whatever, the ox became fully restored to health. Dr. Whiteford stated, in reply to a query, that he was not informed of any similar case in which the *rattle-weed* had been used, and was unable to explain its virtues or therapeutical action. Neither were any of the members present familiar with the use or medicinal properties of this well-known herb, and our chief object in publishing the report of this remarkable case is to bring forth the experiences on the part of the medical profession in their use of *hieracium venosum* upon the human subject. After the ox had fully recovered his health, to all appearance, the owner, fearing that, if put to work again, he might relapse, therefore resolved to fatten him for beef. Contrary to expectation, the animal fattened readily, thus showing conclusively that his health was fully restored. When finally butchered, it was discovered that one of his lungs had almost entirely disappeared—the atrophied remnant appearing as a hard gristle, about the size of a man's two fists. The other lung, and all other parts of the body, so far as inexperienced persons could judge, was in a perfectly good condition.

Dr. Forwood inquired of Dr. Whiteford if the ribs on the diseased side of the ox were *shrunk in*. The Doctor replied that they were, and that he had forgotten to mention this conspicuous deformity, which was remarked by all who saw the animal. The diseased side of the ox was so contracted as to make it appear almost perpendicular from the backbone downward.

Dr. Forwood rejoined that it was quite a common remark for ignorant physicians to make—or those, more culpable, who presumed on the ignorance of others—that “such a patient's lung had long been diseased, and was now *entirely gone*,” although the said patient was at the same time able to attend to his usual business, and did not show any deformity of the chest whatever. Dr. Forwood remarked, in continuation, that the entire loss of a lung in the human subject was an event of extreme

rarity, and when it did occur, it was invariably characterized by the marked deformity referred to by Dr. Whiteford in the case of the ox—the contraction being an effort on the part of nature to fill the vacuum.

There are two interesting points in the case here related: Firstly, what was the nature of the malady, and how contracted? points that we have no light upon; and secondly, in what way did the *rattle-weed* act as a restorative?

It is hoped that some of the readers of the *Journal* can and will afford information on these points of interest. It is evident, from the history, that the ox was not suffering with *phthisis*, for that is a constitutional disease that does not result in such a resolution. The probability is that the animal had an attack of *pneumonia*, though we were informed that his illness occurred in the summer, when such diseases are rare; but the most interesting question connected with the case is: how did such remarkable results follow the use of the *rattle-weed*? And why is it not more frequently employed in the lung diseases that afflict mankind?—*Maryland Medical Journal*.

Treatment of Affections of the Fifth Nerve.

. BY C. GERHARDT.

(Deutsches Archiv f. klin. Med. XXVI. p. 1.)

A TAILOR, fifty years of age, had suffered for fifteen years from an obstinate neuralgia of the second and third divisions of the left trigeminus—the lingual branch was not affected, but, on the other hand, some single branches of the first division were involved. Compression of the left carotid caused the pain to disappear at once—no other therapeutics had even mitigated its severity—and the points which had been the seat of the pain became insensible to pressure. The patient died of pulmonary gangrene and “gasp-pneumonia.” The left ganglion Gasseri was found surrounded by very vascular connective tissue, and the point of its location had undergone changes from circumscribed pachymeningitis; the bony base of the cranial cavity was rough at different points. (The patient while young had been struck on the left side of the nose with a stone; this injury resulted in a tedious periostitis, which, following one of the divisions

of the trigeminus into the cranial cavity, had become permanently established there.) Some ganglia cells were remarkably pigmented in the external portion of the ganglion; the capillaries were much dilated and completely surrounded by extravasated blood.

Two other cases are reported, one of a woman, and the other of a man, both suffering from reflex spasm of the maxillary muscles. In the first case the lock-jaw occurred after an inflammation of the pharynx and acute catarrh of the tubes and the middle ear. Unmistakable tenderness was produced by pressure along the track of the first and second divisions of the trigeminus at the well-known points, and at the same time anæsthesia of the corresponding parts of the skin. A moderately strong constant current (one electrode on the points of pressure, the other on the proc. mastoid.) relieved the trismus and also cured the *recidives* of the decidedly hysterical patient. She had, at a later period, an attack of aphonia.

In the second patient, similar symptoms had appeared after a cold; the neuralgic symptoms in this case affected the third division of the right trigeminus. While in the preceding case the ear was inflamed, there was, in this case, an inflammation of the mucous membrane between the maxillæ within the buccal cavity. The constant current in this case also removed both the motor and the sensory disturbances.

On the Ætiology of Anthrax.

(Bull. de l'Acad. da Méd. No. 28, 1880. Centralb. Chirurg. No. 1, 1881.)

IN 1878, Pasteur made experiments in infecting animals by feeding them with food containing artificially bred anthrax bacteria. A large number of animals, after a period of incubation ranging from eight to ten days, died with symptoms of anthrax disease. The mortality increased if small pointed bodies, as thorns, were added to the food. Autopsy showed that these animals which had thus been infected artificially presented small lesions in the mouth and pharynx, at the same points as in those animals spontaneously affected. On the strength of these experiments, P. is inclined to believe that the apparently diseased animals had been infected through the food, and

supposes that the anthrax bacteria of the dead and buried animals had been communicated to the food through the medium of the soil where the food grew, and this must have taken place before the cadavers became putrefied, as putrefaction destroys bacteria. P. experimented in this direction, making the experiments more real by mixing the blood of the animals diseased with anthrax, at a medium temperature, with soil which had previously been moistened with urine, and observed the very rapid development of bacteria, which could still be found after months and years. He could also demonstrate the presence of actually living and infectious bacteria at a place where he had buried a sheep which had died of anthrax and had been dissected. The fact that bacteria emigrate from the dead animal to the surface, and also that bacteria developed before burial, on the surface, could still be found there after a long lapse of time, notwithstanding the influence of the plowing, the rain, etc., is proved in a peculiar way. According to P. the earthworms are the carriers of the anthrax bacteria, which can positively be found in the excretions of these worms. If we keep living earthworms in soil containing anthrax bacteria, the latter may, at some time, be found in the excretions. It is, therefore, very probable that these bacteria are washed out of the excretions of the worms by the rain and are taken up with the food by the animals. The practical conclusions which can be drawn from P.'s discovery may be learned elsewhere.

Anasarca in Bright's Disease.

IN the treatment of anasarca in Bright's disease the necessity of exciting the skin to action is recognized at Bellevue Hospital.

By means of perspiration much fluid can be removed from the body and the œdematous condition of the patient relieved.

In many cases when no danger exists of the occurrence of œdema of the lungs, pilocarpine may be used to produce this effect. In some cases it is contraindicated by organic or valvular disease of the heart. In these cases the following method is employed in the hospital: The patient is sponged off with alcohol, is then wrapped in a

wet sheet, over which several blankets are placed. In the course of an hour the diaphoresis is usually profuse. The use of alcohol before the pack is recent, and has proved successful. It is supposed to act directly upon the sweat glands as a stimulant, and certainly increases the amount of the sweating produced by the pack. When these means do not produce sufficient diaphoresis, the fluid extract of jaborandi in dose of one drachm is given just before the pack is applied, and as it may produce nausea if given by the stomach, a preferable method of administration is by enema, in which case the dose may be increased to one and one-half drachms. In one case at present in the wards this method is daily pursued with good results. The anasarca is rapidly decreasing. When diaphoresis by the hot-air bath is attempted, the use of alcohol is found to be of equal service, and in cases of uræmic convulsions it has certainly hastened and increased the excretion through the skin—*Chicago Medical Review*, December 20.

Pharmaceutical.

THE invention of the capsule may be regarded as one of the triumphs of modern pharmacy.

The old-fashioned naked pill, with its irregular contour and its nauseous taste, which not infrequently excited in the pharynx an inverted deglutition, whereby the disgusting intruder was tossed up into the region of the posterior nares, there to remain fixed until the unfortunate swallower should dislodge it by vomiting, has become almost if not quite a thing of the past.

The capsule has manifest advantages over the pill, such as ease in swallowing, readiness of solution, together with the protection it affords the medicine against atmospheric influences, thus insuring that it shall arrive in the stomach in the best condition for assimilation; and these facts being well understood by the physician, the term, "*℞t. pilulæ*" at the close of a prescription is not now very often seen.

A capsule to meet the above requirements should consist almost entirely if not wholly of pure gelatin, which, on entering the stomach, appropriates water of composition, and becoming a jelly will readily dissolve and set the contained medicine free.

But the increased demand for capsules, together with a desire to furnish them at a low price, has tempted some manufacturers to use glue and various other cheap and impure compounds in their manufacture.

Capsules made of these substances are sometimes so slow of solution as to seriously delay the action of the medicine, or worse still, resisting the fluids of the alimentary tract to the end, pass out like bullets, unchanged.

Even if they be retained and dissolved they are competent to make mischief, for they carry with them the seeds of fermentation, which may germinate to the prejudice of a delicate digestive apparatus.

Before ordering them for a patient the physician should test a given specimen of capsules by holding one in his mouth until it dissolves. If its solution is rapid, and no unpleasant flavor is perceived, it may be safely used; but if it tarries long upon the tongue, or imparts to the taste a savor of the hide store or the sour paste pot, it should not under any circumstances be given to a sick person.

The old and highly reputable firm of H. Planten & Son, 224 William Street, New York, furnishes an article which will stand any test, and we can conscientiously recommend their capsules to the profession.

They are made of seven different sizes for the mouth and of three for the rectum. The latter are conical at one end, and present a form which may be easily introduced into the rectum, and retained by this organ without discomfort.

Report of a Case of Strychnia-Poisoning Treated by Hydrate of Chloral and Chloroform.

BY BENTON J. HON, M. D.

ON February 25 I was called to see Mr. L. M., of Orleans, Ind., whose wife had given him by mistake about three grains of strychnia sulphate done up in a capsule. I reached the house in fifteen or twenty minutes after the taking of the drug, and found the patient in a state of high nervous excitement, starting at the least sound, while muscular spasm was beginning to show itself by an almost constant twitching in the limbs. The patient also complained

of a sensation of constriction about the throat and chest.

There being no history of poisoning in the case, I was at first uncertain as to diagnosis; but feeling that I must meet existing conditions, and having nothing but a small pocket medicine-case with me, I administered a dose of morphia sulphate. But the symptoms continued, and as the case developed I began to suspect the cause, and sent immediately for ipecac, which I gave in large doses until the patient vomited freely, the morphia probably coming up with the vomited matter.

As soon as the patient recovered from the effect of the emetic, I gave him sixty grains of chloral hydrate. The evidence of strychnia-poisoning was now well marked, for the muscular system was in a condition of tonic spasm. The eyes looked wild and staring, the arms were bent at the elbows and fixed, the hands clinched, and opisthotonus complete. Consciousness, however, was not affected. An examination of the medicine from which the dose had been taken confirmed the diagnosis.

I now resorted to chloroform by inhalation, giving it without stint, and continued the chloral in doses of sixty grains hourly.

I commenced treatment at about eleven o'clock A. M., and at three o'clock P. M. the patient's condition was such that I thought it proper to leave him. At this time he was in a remarkably comfortable state, considering the fact that in less than four hours' time he had swallowed three grains of strychnia, taken a dose of morphia, and two or three drams of ipecac, had vomited freely, and had been subjected to the racking of two strong tonic spasms, the last of which did not succumb until after he had taken one hundred and eighty grains of chloral hydrate, and about seven ounces of chloroform.

From this time on my patient continued to improve, and made a complete recovery.—*Louisville Med. News.*

Pain and Anodynes.

DR. ROBERTS BARTHLOW, of Philadelphia, says: "Several elements enter into the composition of pain—the peripheral irritation, the transmission of the impression to the center, and its realization by consciousness. Hence, pain

may be relieved either by interrupting its transmission to the centers of conscious impressions, or by suspending the functions of these centers. For example, aconite and gelseminum relieve pain in the former manner, and the anæsthetics in the latter. The anæsthetics, when applied locally, however, have an effect similar to that of aconite, and are, therefore, antagonistic to both peripheral and centric neuralgia. When a few minims of chloroform are injected into the neighborhood of a nerve-trunk, the peripheral expansion of the nerve is put into an anæsthetic and analgesic condition; and since he introduced this method of treating sciatica, cervico-brachial and intercostal neuralgia, coccydynia, and other neuralgias of nerves in accessible situations, his experience has been extremely satisfactory. The needle must be inserted deeply, since merely to inject chloroform under the skin, like morphia, is perfectly useless in such neuralgias, unless the nerve-trunk is in the immediate vicinity. No danger attends this expedient, and inflammatory induration and abscesses very rarely result from it. The most powerful means for relief of pain which is now in our possession—the subcutaneous injection of morphia and atropia together—is an illustration of the advantages derived from the study of physiological antagonism. By this combination the anodyne qualities of the two agents are enhanced, rather than diminished, while the disadvantages of each are in a great measure obviated. The combined use of morphia and atropia is, also, the best preventive of the tendency of anæsthetics, like chloroform and ether, to produce fatal paralysis of the heart or lungs; while the prescription of atropia simultaneously with chloral to a great extent averts the dangers that sometimes attend the use of that agent.—*Nashville Jour. of Med. Surg.*

Uterine Function and Disease.

IN studying diseases of the generative organs, we find that the vulvar diseases of children, the vaginal of young women, the cervical and uterine of middle and advanced age, mark usually the order of attack. When two organs hold a functional relationship, and are subservient to a like purpose in the economy, it is a rule that they react

on each other to such a degree that one can not suffer long and deeply without throwing the other into disorder. The os and fundus, being supplied by branches of the same nerve, and a sympathy existing between the structures, influences acting upon the os and cervix will produce congestion of the fundus. Hence, we have dysmenorrhœ, sterility, pelvic pains, gastric disorders and displacements of the womb; and by the increase of vascular congestion, we have an augmentation of secretion—leucorrhœ. The discharge and the condition which it produces tend to, and are apt to cause sterility. Pregnancy and parturition are the great causes of endometritis. Statistics show that pregnancy accounts for more than half. Most writers agree that most uterine diseases take their origin in the lying-in room. Reamy reports that in the examination of eight thousand women, supposed to be suffering from uterine disease, there were but nineteen cases of true ulceration. There are cases when the discharge, passing over the os, produces erosions, just like the acrid discharge from a child's nose will produce erosion of the upper lip. Munde has, in seven hundred women examined, found but three such cases. The term laceration, and not erosion, is better applicable to most cases. Dudley says: "Just translate the words ulceration or erosion with patulous os into laceration of the cervix, and we have the facts." Dr. Cushing says, ninety per cent. of all cases of so-called ulceration are nothing more nor less than laceration. Dr. Emmet estimates that thirty-three per cent. of five hundred fruitful women coming under treatment had laceration of the cervix. Dr. Munde says seventeen per cent., Dr. Hanks eight and a half, Dr. Baker ten per cent. Dr. Goodell says one out of every six of uterine cases have laceration. Montgomery states that fifty per cent. of women having children have laceration of the cervix. Statistics show that forty per cent. are to the left side, fourteen per cent. are to the right side, and thirty per cent. are double. The greater frequency on the left side is thought to be because the occiput is directed to the left side. Chloral is as necessary in the early stages of labor as ergot is in the later. For this lesion there is but one remedy. Dr. Emmet first recognized thoroughly the lesion, and he demonstrated by his operation a rapid and reliable cure. The operation is one of the most simple, and yet one of the most satisfactory, in the depart-

ment of uterine surgery. Peaslee said it was a master-stroke of genius. Dr. Fordyce Barker says his contribution on the subject is one of the most important which has been made to gynæcology. Says a late authority: "The man who succeeded best in the treatment of uterine disease was the one whose treatment was followed by the smallest amount of cicatricial tissue. Dr. Dudley puts the forcible statement, that if the operation was followed by none of the good results so confidently claimed for it, it would be a justifiable procedure, inasmuch as it causes those tissues which have been the object of so much violent and fruitless treatment to be removed from the field of the speculum and from the approach of the porte caustic.—Dr. P. V. Schenck, *St. Louis Courier of Medicine*, February, 1881.

MICROSCOPY.

Further Observations on the Ætiology and Prevention of Anthrax.

M. PASTEUR quotes a note relating to anthrax written by a former ambassador of Saxony at Paris (Baron Seebach) to M. Tisserand, as long ago as 1865, as remarkably confirming the conclusions recently arrived at as to the nature of the disease.

This note states that on the land belonging to the writer a tenant began in 1845 to introduce improvements in the cultivation. With that view he selected as soil suitable to be spread over the ground used during the winter for cattle-pens—which was destined again to be removed, after being enriched by the presence of the beasts, to form manure—the earth from a strip of land which had been for years used to bury carcasses in. This soil was spread over half the space of the pens, and on this half nearly nine hundred oxen were placed. The sheep were placed close to them, and the rest of the oxen at the other end. A few days after this, in one night two of the oxen died, and the next day six more were lost. On the following morning forty-five were found dead, besides a sheep in the neighboring enclosure. This loss continued. At last the earth was removed, the enclosure cleaned out,

and a layer of rubbish a foot deep was spread over the pens. For eight days the losses continued the same, and then began gradually to diminish. In the first fifteen days three hundred and twelve oxen had perished in the enclosure covered with the removed earth, and eight sheep belonging to the neighboring pen. No deaths occurred in the enclosure which was separated from the fatal spot. In the spring the sheep were turned out to pasture on land manured by earth taken from the place where the sheep which had died in the winter had been buried. In eight days thirteen of these sheep died, although the soil had been well turned, exposed to the air and frost, and mixed with lime and ashes; and of ten more which were confined here as an experiment three died in three days. The shepherd had a belief that certain fields were unhealthy and not fit for the sheep to pass the night upon. A field in the corner of which a sheep had been buried was sown with wheat, and the next year with clover, which grew with great luxuriance in the spot mentioned. Some of the clover was taken from the spot by a neighboring woman, who fed her goat and cow with it. The next morning the cow had a decided attack of anthrax, and the goat had already died from the same disease. Hence the germs—derived from the dead sheep—had been transmitted through the clover after nearly two years. After this the plan, hitherto adopted, of burying dead cattle in shallow graves on the pasturages was abandoned for that of having a special place well divided off and set apart for the purpose, with the result that whereas previously to this step the loss of animals had been from fifteen to twenty per cent. per annum, the average was only seven per cent. for the five years following, and after two years had fallen to five, and three years later to three per cent.

While comparing these facts with those obtained recently by confining sheep over the grave of an animal which had died of the disease, and by experimenting on animals with the earth and worm casts from the same place, M. Pasteur mentions an experiment lately performed by him, in co-operation with M. Chamberland, which is a modification of that first mentioned by virtue of the addition of cut barley-spines to the food of the sheep, which was sprinkled on the soil covering the graves; in this instance two, instead of one, out of four sheep died. The tendency of the rough fiber to irritate the mucous mem-

brane and facilitate the action of the germs is paralleled by the apparently similar action of stubble, which is shown by the increase of mortality among sheep when placed among it.

Highest Magnifying Powers.

MR. A. Y. MOORE also refers to the same subject under this title.

It is well known to all practical microscopists that the magnifying power of an object may be increased by eye-piecing to a certain extent, with a continued gain in resolving power. When the limit of resolving power is reached the magnifying power may be further increased, but nothing is gained, except in the apparent size of details already shown. After this comes a period in which the magnifying power may be increased almost indefinitely; but it is now very noticeable that the resolving power is impaired. The aberrations of the objective interfere greatly with the image. In fact, it is here that a lens is frequently said to "break down."

These three stages may be conveniently studied in an ordinary cheap $\frac{1}{4}$ of 100°. With an amplification of 300 diameters such a lens should easily resolve *P. angulatum*, but try as best we can, the lines of *Surirella gemma* will fail to be seen. Now, if a higher eye-piece be applied, giving a power of 500 diameters, this diatom may be resolved. Supposing this to indicate the limit of resolvability of the object, a still higher eye-piece may be used; but the resolution is simply shown larger. This period probably will extend to 1,000 diameters, but if increased much beyond this less is seen at each increase of power.

The extent to which these three stages may be carried is, of course, dependent upon the quality of the objective and its angular aperture. In testing objectives the magnifying power should be carried to the second stage, for a lens is frequently defeated simply because the visual angles subtended by the lines (or dots) are insufficient for recognition by the eye.

In a recent article in the *American Journal of Microscopy* a magnifying power of 100,000 diameters is mentioned, obtained by means of a Wales' $\frac{1}{16}$. From the fact that *P. angulatum* was the extent of its resolving power,

it is seen that the lens was far into the third stage of its magnifying power. Any such increase of power is, so far as practical work is concerned, useless; but the second stage is what we need and want. Frequently details are seen, but are so small as to tire the eyes; while if enlarged by a higher eye-piece fatigue is prevented.

Mr. Moore suggests the question, What is the highest power ever attained and used *without* losing resolving power, and what objectives are best suited to yield such powers? Will a $\frac{1}{25}$ or $\frac{1}{50}$, with lower eye-piecing, give better results than a $\frac{1}{6}$ or $\frac{1}{10}$ with high eye-pieces and the magnifying powers the same? He is only able from personal experience to give the result of using a $\frac{1}{50}$ eye-piece, with a $\frac{1}{6}$ objective of "180°" (or 100° "balsam angle"), giving a magnifying power of 32,500 diameters. With this he was able to see the last three diatoms of the balsam Moller Platte clearly resolved. The lines of No. 20 did not look exactly like "the pickets on a fence," but more like a lean horse's ribs. The eye-piece was not certainly *easy* to use, and sunlight was necessary to see anything at all.

GLEANINGS.

BY CHAS. A. L. REED, M. D., HAMILTON, OHIO.

PRECOCITY A SIGN OF INFERIORITY.—M. D. Delaunay, in a communication to the French Societe de Biologie, has advanced the opinion that precocity is a sign of biological inferiority. In support of his position, he adduces the fact that the lower species develop more rapidly, and are at the same time more precocious than those higher in the scale. Man is the longest of all in arriving at maturity; and the inferior races of men are more precocious than the superior, as is seen in the children of the Esquimaux, Negroes, Cochinchinese, Japanese, Arabs, etc., who are, up to a certain age, more vigorous and intellectual than small Europeans. Precociousness becomes less and less in proportion to the advance made by any race in civilization—a fact which is illustrated by the lowering standard for recruits, which has been made necessary in France twice during the present century, by the decreasing rapidity of growth of the youth of the country. Women are more precocious than men, and in all domes-

tic animals the female is formed sooner than the male. From eight to twelve years of age a girl gains one pound a year on a boy, and in mixed schools girls obtain the first places up to the age of twelve. The inferior tissues and organs develop before the higher ones, and the brain is the slowest of all organs to develop. M. Delaunay concludes his paper by stating that the precocity of organs and organisms is in an inverse ratio to the extent of their evolution.

ADMINISTERING ALCOHOL TO CHILDREN.—We believe it is not an uncommon custom in the country to administer spirit in various forms to infants and children. It is, we think, very objectionable in the absence of medical advice, and but little better than the administration of opium. Two cases of death in one night—that of twin children—are before us, both dying suddenly at Tenby, without being seen by a doctor. They were only eight months old, and the mother's chief idea of treatment seems to have been beef tea with brandy or sherry—very doubtful dietetics at eight months. Death from natural causes was the ready verdict, which we would slightly amend thus: Death from natural and unnatural causes. The kindness of the parents was not at fault so much as their intelligence. The medical man examined said that he could not account for the death, but is afterward reported as saying that teething was enough to explain death.—*London Lancet*.

LOEWENBERG believes that in the majority of cases *fungous deposits in the ear* are caused by the introduction of fatty substances, such as oils, into the auditory canal. These all undergo rapid decomposition in the warmth of the canal, and are transformed into glycerin and fatty acids. The spores of the fungi, which exist everywhere in the atmosphere, terminate rapidly amid such favorable surroundings. He therefore never prescribes any oily substances, but uses glycerin in place of them. When once the fungi have taken root and are growing he employs alcohol against them.—*Dr. C. S. Bull, A. M., M. D.*

THE CONVICT, DR. BUCHANAN.—Buchanan, the foster-father of bogus medical diplomas, entered the Eastern Penitentiary at Philadelphia a few days ago with his head covered by a sack to prevent his knowing the location of his

cell. He had been confined up to that time in the county prison, but now he is a convict in the penitentiary, fulfilling the sentence passed on him for conspiracy to defraud the United States of his bail. There are other charges still pending against him. Thus ends for the present the career of the celebrated "doctor."—*Medical Record*.

BOOK NOTICES.

LECTURES ON DISEASES OF THE RECTUM AND THE SURGERY OF THE LOWER BOWEL. Delivered at the Bellevue Hospital Medical College. By W. H. Van Buren, M. D., LL. D. (Yalen.), Professor in Bellevue Hospital Medical College, etc. 8vo. Pp. 412. New York: D. Appleton & Co. Cincinnati: R. Clarke. Price, \$3.00.

The rectum is not mentioned as much in poetry as the heart or head; nor are its praises or those of its functions usually celebrated in song; nor is it the theme of conversation to any large extent in the parlors of the refined and polite. Among all classes of the laity there is a disposition to ignore it as much as possible. If at any time a hint as to its offices is forced, the greatest wariness is used in order that the profoundest secrecy may be observed, and not a word be overheard. If by any accident that could not possibly have been provided against, a lady has discovered that she has made it known to a gentleman that she is aware that she possesses a rectum, she feels as if she never wanted to look him in the face again.

Notwithstanding, however, that all these are facts which we have stated, yet there is scarcely an organ in the body more important than the rectum. Certainly there is none whose morbid condition is capable of producing more discomfort. How miserable is life rendered in many persons by the piles! In others every comfort in living is destroyed by prolapsus of the rectum, stricture of it, fistula terminating in it, cancer of it, etc., etc. A clear conscience is no more necessary for happiness in this world than a healthy rectum. We have met with many persons of wealth who would give their whole fortunes willingly to purchase, if it could be done, a rectum that had no ailment.

Notwithstanding a frowning world, therefore, the dis-

eases of the rectum are worthy the most profound consideration of every humane physician who desires to make life comfortable and happy to every one who is willing to pay him well for it. But there are no class of affections more difficult to treat than those of the rectum, especially those of a chronic form. The consequences are that many drag out a miserable existence for years suffering from uncured hemorrhoids, or a prolapsus, or stricture, doctoring with quacks of all kinds, stating that regular physicians had failed to cure them. This is a stigma upon the profession that should not exist. Negligence on the part of general practitioners to qualify themselves to treat these diseases is the cause; and this could be easily remedied by studying such a work as the one before us of Dr. Van Buren.

The work has now reached a second edition, showing that the short time it has been before the profession it has gained for itself a high esteem. The author has had large experience in the treatment of rectal affections which he has embodied in his work. It embraces twelve lectures illustrated by numerous wood-cuts, exhibiting various pathological conditions. The discussion of the different disorders is plain and practical, and a treatment, in each instance, suggested which observation and experience has approved, and which the physician, who studies and applies it, will find it to be highly successful.

A TEXT-BOOK OF HUMAN PHYSIOLOGY: Designed for the Use of Practitioners and Students of Medicine. By Austin Flint, Jr., M. D., Professor of Physiology and Physiological Anatomy in the Bellevue Hospital Medical College, etc. Illustrated by Three Lithographic Plates and Three Hundred and Fifteen Wood-cuts. Third Edition, Revised and Corrected. Imperial 8vo. Pp. 978. New York: D. Appleton & Co. Cincinnati: R. Clarke & Co. Price, \$6.00.

This very magnificent work we have noticed before. It has reached a third edition since 1875, which shows a high appreciation of it by the profession. In these days, when abridged works are in demand by students as text-books, it is a very limited period for so large and expensive a work to reach a third edition in less than six years. We mean expensive compared to the price of the quite small works on physiology prepared for students. Considering

its large size, imperial octavo, and very large amount of reading matter, it is quite cheap.

Large as the work is, it is extensively used as a text-book in the medical schools of this country. This fact speaks well of students, showing, on their part, a desire to thoroughly understand so important a branch of medicine as physiology, and an unwillingness to be content with a superficial knowledge, embracing merely some of the leading facts.

In the third edition, some portions have been rewritten, all errors and inaccuracies have been carefully corrected, and statements that did not appear to accord with the existing state of physiological knowledge have been eliminated. Besides, the author has adopted the views of Bowman with regard to the functions of the Malpighian bodies of the kidneys. The section upon animal heat has been entirely rewritten; and an account is given of the author's new experiments upon this subject, showing the probable generation of heat in the body by the union of oxygen and hydrogen and the formation of water. A short description has also been introduced of the cerebral convolutions, with a new diagram, and a brief account of the recent discovery by Boll, of "retinal red."

Improved and brought up to the present state of knowledge, we regard it as the best work on physiology extant. We not only recommend it to physicians who desire to have a thorough knowledge of physiology as being one of the principal foundation stones in the science of medicine, but also to students as a text-book who wish a complete work.

THE PRINCIPLES AND PRACTICE OF SURGERY. Being a Treatise on Surgical Diseases and Injuries. By D. Hayes Agnew, M. D., LL. D., Professor of Surgery in University of Pennsylvania. Profusely illustrated. Vol. II. 8vo. Pp. 1,066. Philadelphia: J. B. Lippincott & Co. Cincinnati: Robert Clarke & Co. Price, \$7.50.

This is the second volume of this fine work on surgery. The third volume, we understand, is in rapid course of preparation, and will be issued soon.

The work, when completed, will be second to no work on surgery in the English language. Prof. Agnew, as a hospital surgeon for a great length of time, and as a clin-

ical teacher in both hospital and dispensary practice—adding to these the charge of a large private practice—has had immense experience. We think in this large work of three great volumes the science and art of surgery will be found to be brought as near perfection as it is capable almost of being brought. Mr. Erichsen, the great English surgeon, when he visited this country a few years ago, stated that surgery, then, as an art, had attained to a degree of progress beyond which he could not see how it could advance much further. Of course, as a science, it will progress as physiology, pathology, therapeutics, etc., become unfolded and the knowledge hidden in them laid bare. If Mr. Erichsen is correct in his statement, Mr. Agnew's work, we think, can be relied upon as representing the art of surgery brought to a state of perfection, *i. e.*, a state wherein there is no further room for improvement. At least three years have elapsed since Mr. E. made his remarks, and we feel sure, on examining the volume before us, that Dr. Agnew has embodied in his work a very thorough description of all instruments, appliances, and manipulations belonging to surgical treatment that were perfect at that time, and, besides, has given attention to the improvement of any others that may have been improved since then. And as regards the science of surgery, which, of course, is the same as that which forms the basis of the practice of medicine, the work has been brought abreast of present knowledge.

In conclusion, we will state that the work is one of the finest in the English language or any other language. The profession of this country can well be proud of it, as it will reflect the highest credit on American surgery; and not only the highest credit on American surgery, but on American learning.

A. TREATISE ON ALBUMINURIA. By W. Howship Dickinson, M. D. Cantab. F. R. C. P., Physician to St. George's Hospital. Second Edition. 8vo. Pp. 300. New York: Wm. Wood & Co. Cincinnati: R. Clarke & Co. January, 1881.

This is the first volume of Wood's Library of Standard Medical Authors for 1881. We have noticed too many times the enterprise of the Messrs. Wood & Co.'s Library, issued each year, at an unusually low price per volume

to subscribers of each annual library of twelve books, for our readers not to be familiar with it.

We learn from the publishers' preface that this volume is one of three written by its distinguished author upon "Diseases of the Kidneys and Urinary Derangements," and is intended to be a complete treatise upon the subject of which it treats. Although one of three devoted to the consideration of the same class of diseases it is independent of the other two.

For the information of our readers we will quote a paragraph of chapter III., on the "Pathology of Tubal and Diffuse Nephritis:" "In the more acute varieties the inflammatory action, in its early stage, is accompanied by a great increase of blood in the gland, which becomes perhaps more than double its usual weight. I have related an instance in which the capsule was burst, nearly symmetrically in both kidneys, from the extent and suddenness of the tumefaction. But much and early as the kidneys are often swollen from tubal nephritis, such a result is exceptionable. The surface remains perfectly smooth, but there is a remarkable increase of vascularity. The vessels which divide the surface into lobules, and in health are but faintly seen, become intensely injected, sometimes so as to give an almost uniform redness to the surface. The stellate veins which are seen in a later period of the disease are as yet absent. The capsule is loose and thin, as in health. On section the inside presents a red or chocolate color, and drips with blood. The pelvis is injected. Underneath the blood, by which the tissue is obscured, a light colored or buff deposit exists, which does not belong to the healthy kidney. This becomes more evident when the surface has been washed. The Malpighian bodies stand out as red dots. It may happen that though the disorder be no less acute, the congestion will be less conspicuous than the increase of bulk. The color may be whiter than in health, though the cut surface exudes blood freely, and the whole organ is obviously injected. But the vascularity is marked by the opaque white epithelium which distends the tubes; and the cortex, which is generally increased, looks as if it consisted of two materials: a red and buff, coarsely intermingled. The cones are less changed than the cortex, being simply congested.

"Under the microscope, the cortical tubes are seen to

be stuffed with an opaque brown material, which, so long as it remains in the tube, does not display any structure, but looks uniformly granular. Spread out on the glass it is seen to consist of cells of epithelium, not changed excepting that they may be stained of a brownish color, besides blood corpuscles and indefinite granular matter; the latter probably resulting from disintegration of the epithelial cells. This condition is most marked in the convoluted tubes, but the straight usually contain more or less of the same material. Besides the cell growth there is usually fibrinous exudation in the tubes. In some cases this is fatally abundant."

In the treatment of nephritis attended with albuminuria the author recommends diluents. He regards copious draughts of distilled water daily as beneficial, or soda water, or water acidulated with cream of tartar. Hot water baths or vapor baths he considers deleterious. He considers that a copious flow of water through the kidneys should be brought about if possible, that they may be kept washed out—otherwise the tubuli become clogged by deposits within them. They should be relieved, however, as much as possible from the elimination of nitrogenized material. Food having such elements in large quantities should be avoided. He advises the free use of milk. Hydragogue purgatives he considers as injurious except in the latter stages when there are dropsical effusions. The two prime objects to be kept in view in treatment is to save the kidney labor, and to keep the tubuli from becoming blocked up.

We have no hesitation in commending the work as one of great value, and in recommending it to our readers as an authority in the diseases of which it treats. It contains several very beautifully colored plates, which alone are worth the price of the book. They illustrate the condition of the kidney under different pathological circumstances better than any colored plates we have ever before seen. Besides these, there are numerous excellent woodcuts.

A TREATISE ON THE MATERIA MEDICA AND THERAPEUTICS OF THE SKIN. By Henry G. Piffard, A. M., M. D., Prof. of Dermatology in the University of the City of New York. 8vo. Pp. 357. New York: Wm. Wood & Co. Cincinnati: Wm. Stacey. February, 1881.

This work also belongs to the series of "Wood's Library of Standard Medical Authors" for 1881.

On the title-page there is printed in Latin the following motto, which is to explain the object of the work: "*Morbi epidermidem, epithelium, cutim, et celluloseam membranam afficientes tam multi sunt, ut vix in ordinem patiantur redigi; ex medicamentis autem quæ maxime ad eorum morborum curationem sunt in usu, hic proponemus.*"—DE GORTIER (1740). We translate as follows: "There are so many diseases affecting the epidermis, epithelium, skin, and cellulose membrane that they scarcely permit to be reduced into order; but the remedies which are mostly in use for the cure of these affections, we here set forth." We would judge from this quotation from Gortier that he felt more competent to treat skin diseases, than he did to diagnose them. It may be that, like some of our modern doctors, he treated all skin diseases the same way, and did not trouble himself about discriminating differences among them.

The title of the work very well explains its scope. Part I. contains a list of medicines that are known to exert an influence upon the skin, and the affections in which they are employed. The second portion of the work describes the various skin diseases, and the method of diagnosing them, and also how their various remedies should be applied. The work will be found useful for ready reference. It contains an unusual amount of valuable practical material. If not ranking among the most valuable of the series of the library, it will be esteemed worthy of a place on a physician's book-shelves.

MINOR SURGICAL GYNECOLOGY. A Manual of Uterine Diagnosis and the Lesser Technicalities of Gynecological Practice. For the use of the Advanced Student and the General Practitioner. By Paul F. Munde, M. D., Prof. of Gynecology in Dartmouth Medical College. With 300 Illustrations. 8vo. Pp. 381. New York: Wm. Wood & Co.

This book has been written for the purpose of describing in detail many minor gynecological operations that are not well explained in other works. Larger works, like that of Thomas and others, make but brief mention of the minor technicalities and manipulations commonly employed in the diagnosis and treatment of diseases of

women. Their pages are mostly filled up with discussions of the pathology and treatment of the important affections to which women are liable, and can not necessarily embrace in their scope instructions in making examinations, in manipulations, etc., which, nevertheless, are highly essential for making correct diagnoses. It is presumed in such works that the reader is already possessed of such knowledge.

The author's descriptions are so in detail and so very plain that a student would have to be dull indeed who would not thoroughly understand them. He could not have advantages superior to the instructions afforded by this work, unless he were in a hospital witnessing the manipulations of those who were expert and was instructed by them. If we had space we would copy some of the descriptions of manipulations for the purposes of diagnosis that it might be seen how successful the author has been in making everything plain.

The work certainly can not help but become in great demand by students and young practitioners, containing, as it does, so much practical matter that is not found elsewhere. It is a work that, when possessed, a young physician would feel that he could not get along without.

A TREATISE ON DISEASES OF THE JOINTS. By Richard Barwell, F. R. C. P., Surgeon in Charing Cross Hospital, London. Illustrated by Numerous Engravings on Wood. Second Edition, revised and much enlarged. 8vo. Pp. 463. New York: Wm. Wood & Co. Cincinnati: Stacey & Co. March, 1881.

The author states that in this edition the work has been entirely rewritten, containing but a few words here and there that were in the first.

The first chapter of the work is devoted to describing the pathological anatomy of joints, and in doing this the author exhibits his very thorough knowledge of the subject. The chapter is illustrated by a number of cuts illustrating well the microscopical appearances of various tissues. The author here demonstrates the necessity of a knowledge of the normal and pathological anatomy of joints in order to have any correct notion of the various diseases affecting them, and to understand the principles of their treatment.

It has been supposed by some that the cells of bone

have no nuclei; but he puts all doubts on that subject to rest by stating that he possesses many specimens prepared for the microscope in which the nuclei may be seen as small rounded bodies attached to the walls of the lacunæ.

As it will no doubt interest the most of our readers, we copy the description of bone. All, of course, have an idea of what constitutes bone, but not every one can give a description of it: "Bone is to be considered simply as a connective and areolar tissue, the ground substance of which has been saturated with lime salts. In it are all the elements of that tissue as they may be found surrounding a vessel. There is the space in which the little vascular branch lies (Haversian canal); around it are arranged connective tissue corpuscles (bone cells) lying in cell spaces (lacunæ) and provided with branches (canaliculi). But these parts, which represent the yellow element of areolar tissue, do not stand alone. In the lamellæ a little care and skill will bring into view the fibrous and often wavy form of the intimate bone tissue itself, which is evidently calcified white areolar structure; for many occurrences in the process of ossification show that the primordial cartilage becomes quite changed by peculiar cell arrangement and proliferation previous to the deposit of lime. But of course it is to be noticed that no joint surface lies immediately upon hard, solid bone, such as composes a shaft, but upon a reticulated or cancellated structure; *i. e.*, upon the epiphysal ends of long, or as at the carpus and tarsus, upon short bones."

Affections of the joints are very common, and there are no diseases which require more skill in treatment. Works on surgery treat of them, but, embracing, as they do, so many other topics, but brief attention can be given them. Besides, authors of general works on surgery, probably, in only a few instances, have made them a special study. When a physician has had brought under his care a case of a disease of an important joint, as the hip or knee-joint, he desires all the information that can be had from a work the writer of which has given such affections much attention and has had large experience. If general practitioners would have on their book-shelves such a work as this and properly study it, they would not feel the necessity, in so many instances, to send their patients, suffering with joint affections, to some distant

city to be treated by a specialist. Specialism is yearly on the increase, and the reason is that so many medical men limit their knowledge to the information contained in their text-books, seldom purchasing a monograph devoted to some particular disease, and studying it.

An examination of Mr. Barwell's work convinces us that it is a most valuable one, containing a large fund of information, in regard to a class of diseases, much needed by a large number of practitioners. It embraces in its scope all the diseases of all the joints liable to disease, and their causes—not only those which involve the whole joint, but those limited to parts of the joint or to some of the membranes or tissues forming it or in its neighborhood. In its present improved form we believe the second edition will meet with more demand than the first.

EDITORIAL..

PARTIES who advertise will consult their interests by advertising in a well-established journal—not one just commenced, nor one that has lived out its day of usefulness and is kept alive by occasionally buying up the subscription list of a defunct contemporary. It is better to pay a reasonable sum for space in a journal of large *bona fide* circulation than a very small sum in a journal of scarcely any circulation.

THE MEDICAL NEWS is the cheapest medical journal to advertise in of any medical journal in the West—not because it charges less per page, but because it has the largest circulation. Those who advertise in it usually continue their advertisements so long as they continue to advertise in any journal. In looking over the advertising form it will be observed that not a few of the advertisements have been appearing for years.

We hereby append the post-office law in regard to periodical publications. By noticing it, and keeping it in mind, hard feelings would sometimes be avoided:

UNITED STATES POSTAL LAW.—1. A postmaster is required to give notice *by letter* (returning a paper does not answer the law) when a subscriber does not take his paper out of the office, and state the reasons for its not being taken. Any neglect to do so makes the postmaster *responsible* to the publishers for payment.

2. Any person who takes a paper from the post-office, whether directed to his name or another, or whether he has subscribed or not, is responsible for the pay.

3. If a person orders his paper discontinued, he must pay all arrearages, or the publisher may continue to send it until the payment is made, and collect the whole amount, *whether it be taken from the office or not*. There can be no legal discontinuance until the payment is made.

4. If the subscriber orders his paper to be stopped at a certain time, and the publisher continues to send, the subscriber is bound to pay for it *if he takes it out of the post-office*. The law proceeds upon the fact that a man must pay for what he uses.

5. The courts have decided that refusing to take a newspaper and periodicals from the post-office, or removing and leaving them uncalled for, is *prima facie* evidence of intentional fraud.

PUBLIC CHARITY.—The Bible says: "The poor ye always have with you," and it is probable that the poor will always be with us. There are so many causes for

poverty, subjective and objective—both in the individual and in society—that it is probable that it will always exist. Misfortunes, disease, crime, and selfishness will last while the world lasts, and consequently there will always be those not having enough of the world's goods to supply necessary wants, and those who will abound in wealth. Without crime, vice, injustice, sickness, or indolence existing, which seem to be the most prolific causes of poverty, the fact that every one has a right to exert all his talents to secure wealth, and is awarded the privilege of continuing to hold as his own all that he amasses, and to devise to whomsoever he pleases when he comes to die, and in case he does not will it to any one, the law bestowing it upon his family, this fact, to repeat, would alone, sooner or later, bring about such an unequal division of property that while some would have vast riches, many more would have only sufficient to maintain themselves, and not a few would be in abject poverty. In the struggle for existence, it seems to be overlooked that men differ in talent and ability to acquire property, and that, therefore, the weaker, or those who are deficient in these qualifications need assistance in the struggle. It is acted upon that, in qualifications, they are equal, and therefore, in time, when it is found that a few not only have all that they need, but greatly in excess of it, and though many have only just enough, and some nothing at all, it is assented to that it is right—the events are not found fault with. But all men have to die—the rich as well as the poor. The estates of the wealthy being divided among many heirs, who scatter, may be waste it, is the greatest check on the tendency to the unequal distribution of property.

But we did not set out to write an article on political economy, however much that branch of learning may have to do with medicine as a collateral science. Physicians have much to do with the poor and distressed, and consequently are much interested in the means instituted for their relief. In fact, eleemosynary efforts depend very much on members of the medical profession for success. There could be no hospitals without them, no lunatic asylums for the restoration of reason. The physician is a *sine qua non*, almost, whichever way one may turn in taking steps for the relief and amelioration of the condition of the poor and needy. If his prescriptions be not

directly required, his learning in sanitary subjects will be essential. A physician's profession is such as to make him deeply interested in charitable undertakings and most anxious for their success.

An ancient mode of distributing charity was to give money to an applicant for it who represented himself to be poor, and who carried upon his person the outward and visible signs of poverty, which usually consisted in tattered and dirty clothes and a dirty and foul person. To such a mendicant a piece of money was given of a value corresponding to the donor's means, modified more or less by his sympathies and generosity of his nature. After this gift no further thought was given that recipient unless he again presented himself for another donation, which was repeated or not according to circumstances. By gifts of this kind a charitable man exhibited his charity, performed his works of mercy. If called upon to relieve a family whose head was probably prostrated by sickness, he would send some food with a dollar may be in money, and, if needed, a load of coal or wood. It did not occur to him that charity could be rendered in any other way. It seems never to have been thought of by any one that there could be such a thing as a systematic charity, a charity that included something more than the giving of a small piece of money to each applicant for relief, with but little thought whether the applicant was worthy or not, that embraced every part of the man that needed administering to—not only his physical being as regards food and clothes, health and cleanliness, but also his moral and mental nature.

But humanitarians, in these latter times, have made great progress. They have taken steps which, if continued in, will revolutionize the bestowing of charity, reforming of the criminal and vicious, the rearing and educating wayward and incorrigible children. In all large cities there have been from time immemorial, so far as we know, Infirmary Boards, as they are termed, to furnish aid to not only the out-door sick, but also to render assistance to the poor generally in the way of supplying them with fuel and a few essential articles of living, or a few groceries. In Cincinnati the Infirmary Board has consisted of three directors, with a salary of about \$1,500 each, and a clerk or book-keeper, with about the same salary. This Board appointed in each of the twenty-five wards an

overseer for the poor, whom they paid \$200 a year. The directors are elected by the people—the political parties—and have always been chosen without any reference to their qualifications for the position. The overseers, consequently, have always been appointed in consequence of their party service. As might be expected, these political sharks and bummers have expended the money for the poor of the city in a way more to advance their own political interests and that of their party than to relieve the worthy poor. Besides, their salaries and office expenses amount to more than the poor receive. It is certainly a faulty system of relief that requires more money to meet the expenses of distributing relief than is expended in relief, even if what is expended in relief is properly used. We have not been informed how much the poor fund amounts to each year in Cincinnati, but we feel sure that at least 60 per cent. is paid in salaries and office expenditures. Of the remaining 40 per cent. but very little of it goes to the aid of the poor who most need it and are most worthy of it.

But, in the course of the advance in knowledge of charitable relief, it has been found that the giving of money to a needy person is the least part of it. A man who is given a meal to-day will be just as hungry to-morrow, and unless it is the intention to feed him every day, but a little favor is done him by giving him a single meal. His final starving to death would be deferred only a few hours. While it is very humane and right to feed him, yet something more should be done for him, that he may not have to beg any longer. Namely, he should be put in a way to help himself. Employment should be found for him that he may be self-supporting, and be useful both to himself and the community.

But we will stop here and continue the subject in our next number, assuring our readers that we design to keep within the pale of professional matters.

ALCOHOL AS A CAUSE OF RENAL DISEASE.—Not a few medical writers regard the habitual use of alcoholic beverages as a prolific cause of renal affections. Doctor, now Sir Robert Christison, states that three-fourths, or even four-fifths, of the cases of granular degeneration of the kidneys which occur in Edinburgh, are referable to a greater or less degree of intemperance. Dr. Dickinson, however,

thinks that this statement may be interpreted to mean that the majority of Scotchman drink whisky to an intemperate extent. We, on our part, are disposed to agree with Dr. D. that an agent which is powerful for evil is certain to be credited with mischief which it has had no share in producing. There is no disputing that the effects of liquor drinking are most calamitous—calamitous as regards its effects on both body and mind, and, we would say, soul, too, if it were not that by including it, we might be charged with going beyond our professional limits. But because it is prolific of evil, it does not follow that it is the cause of all the evils that may fall upon one who unfortunately indulges in it, even though it be in excess. Some pious people are disposed to ascribe to the Devil all the sins they commit; but we have the highest theological authority to the effect that the source of very many sins is in the individual himself, and that his Satanic majesty, although very wicked indeed—so much so that his wickedness can scarcely be exaggerated—yet he is quite innocent of many that not a few are disposed to charge upon him.

Dr. Dickinson has taken great pains to ascertain the effects of the intemperate use of alcoholic beverages upon the kidneys. He has made many *post-mortems* of those who have died from delirium tremens, and of well known drunkards who have died from accident—by violence or suicide. The result of his observation is that lardaceous changes may at once be put aside as having no association with this cause of disease. Great alcoholic excess may produce acute renal inflammation and the large white kidney, but the disorder of this origin is exceedingly infrequent compared to the instances in which it is traced to other causes. Sometimes it has seemed that subinflammatory tubal changes occur, evinced by various degrees of congestion and enlargement of the gland, and, as in other organs under the same influence, the epithelium may become fatty. Besides these interstitial fibrosis is occasionally recognized. It should be kept in mind, however, in noting these morbid conditions in the kidneys of drunkards, it is taken for granted that when discovered they are the results of intemperance. But it is not at all unlikely that if the kidneys of as many other persons were examined, who had died from accident or other diseases than kidney affections, as during an epidemic, not a

few of them would exhibit signs of kidney disease. A great many who had died of delirium tremens, and probably, therefore, excessive drinkers for a long period, showed no evidence of kidney affection.

Diseases of the liver are far more apt to be directly produced by intemperance than diseases of the kidney. Dr. D. found in forty cases of cirrhosis of the liver, in which that change had occurred independently of disease of the heart, and was for the most part associated with spirit drinking, the kidneys were found to be granular but in eight, this disorder being generally in a comparatively early stage. Although Dr. D. does not mention it, it is very likely that in these eight instances the kidney changes were directly caused by the morbid condition of the liver, and indirectly only by the use of alcohol.

Alcohol, when taken into the system, passes through the liver before it reaches the kidneys, and, if not in the blood in excess, will be eliminated by the liver and lungs. The urine smells of liquor when an individual has drank to intoxication. Dr. Ogston relates a case in which the urine of a person, who had died drunk, gave off the vapor of alcohol so thick that it caught fire when a blaze was brought near it. When the blood is loaded with it, the secretion of every gland in the body seems to contain it. Under such circumstances the skin exhales it. We have known a large room to be pungent with the fumes of whisky almost immediately on a drunken man entering it, being exhaled not merely by the breath, but by every one of the millions of pores of the skin.

The effect of alcohol upon the organs, with which it comes in contact, is to increase the fibrous tissue, and renal fibrosis follows, no doubt, sometimes directly from the action of alcohol. While other affections, too, may result from it, as renal granulation, etc., yet these are excited by other causes more readily than by alcoholic spirits.

Alcohol originates diseases enough, and those of an incurable character, for it to be at all necessary to ascribe it as a cause when the evidence that it is so is not at all conclusive, in fact, is rather to the contrary. Eliminated by the liver and lungs, when taken into the system in a small amount, and only reaching the kidneys when incorporated in the blood through an excessive quantity having

been drank, it certainly can not be regarded as prolific of kidney affections.

DECEASE OF F. A. NOBERT, THE EMINENT OPTICAL PHYSICIST.—We learn from a copy of the *London Times*, recently sent us by a friend, that Nobert, the great optical physicist, of Borth, Pomerania, has died. Microscopists, who take an interest in the resolution of fine lines by lenses of great angle of aperture, are familiar with the rulings of this gentleman of exceedingly fine lines on glass by a diamond. They have been famous the world over, and many have been the microscopists of this country and Europe, who, with newly purchased objectives of high price, and guaranteed tremendous angle of 180° or less, have sweated and strained their glasses to almost exploding them in attempts at resolving the noted 19th band of the test plate.

For the information of our readers who are not familiar with microscopical subjects we will state that Nobert ruled on glass by means of a diamond successive bands of lines of increasing fineness of division, from the rate of 1,000 to the Paris line to 10,000 (equal approximately to 112,000 to the English inch). It was formerly Nobert's opinion that the last four bands of his nineteenth band plate would never be seen resolved in the microscope. This opinion he was constrained to withdraw after careful inspection of photographs of the whole series of bands by Dr. J. J. Woodward, of the Army Medical Museum, of Washington, from which an actual count of the lines actually ruled was made by Dr. Woodward, and admitted by Nobert. Nobert then proceeded to make a new plate of twenty bands of lines, varying from 1,000 to 20,000 to the Paris line. The lines on the tenth band, in this latter plate, correspond in fineness of division to the nineteenth band of the former plate. The microscopists of the future have, therefore, Nobert's legacy before them to resolve the lines on the later test plate. Mr. Nobert was very silent as to the method of engraving his fine rulings, and it is doubtful if he has communicated to any one the secret of his process of making and adjusting the ruling points.

For the information of our readers, who are not versed in microscopical subjects, we will state that to resolve the former nineteenth band of Nobert's typen plates, now the tenth, requires not only the finest quality in a microscop-

ical lens, but also the greatest angle of aperture, with necessary apparatus for arranging the light. Up to the present time it measures the limit of capacity of the nearest perfectly constructed microscopical lens ever made.

To give the nearest approach to an idea of the exceeding fineness of Nobert's finest lines, we will state that an Englishman, whose name we can not just now call to mind, although we have one of his specimens, engraved on a glass, with a diamond, the Lord's Prayer in so small a space that if the whole Bible, Old and New Testament, were engraved in a like degree of fineness, they would be contained in a considerably less than a square inch. This engraving can easily be read with a common quarter inch microscopic lens of 75° angle of aperture, while, as has been stated, Nobert's lines require, in order to be rendered visible, the finest lens, from a quarter to one-tenth inch in magnifying power, of 175° to 180° angle of aperture, with all the modern appliances in the way of accessory apparatus for managing light. It is beyond the power of human mind to comprehend the fineness of the lines.

WITHOUT CREDIT.—Since our last issue we have received a letter from Baltimore, informing us that several months ago we had printed in the *News* an article without giving credit to the source from which we had copied it. The name of the author of the article, however, was stated. We regret to say that we have mislaid the letter and can not give the title of the article or the journal from which it was stated we had taken it. We have now not time to make an extended search, but will endeavor in our next to give particulars. We are always desirous to give credit to whomsoever credit is due.

In the last, or March, number of the *Medical Advance*, published in this city, a homeopathic journal, is printed an editorial of the *News*, entitled "Not Much In It." It is neither mentioned that it was written by us, nor that it appeared in our journal. The editor adopts it as his own article. It occupies three pages or over, and cost us about two hours' hard writing; and yet neither we nor our journal receive any credit for it. In the case in which we are charged with cabbaging, the writer has received due credit. Editorials taken from other journals should be credited in preference to any other matter.

DR. FRANCIS JOHN RAPP.—Dr. Francis John Rapp, one of the oldest practicing physicians of Cincinnati, recently died. He was born February 25, 1819, at Villengen, Baden. Having attended the schools at Donauoeshingen and Rastadt, he began the study of medicine at the University of Freiburg, Baden, which he attended from 1836 to 1842. At Carlsruhe, in 1843, he passed a searching examination in all branches of medicine, and then began his career as practicing physician at Goerwihl, Baden. After practicing here one year and at Zell another year he emigrated to America with his family, consisting of wife and child, and arrived at Cincinnati in November, 1847, where he remained until death closed an active medical career, in which, through energy, conscientiousness and strict attendance to his professional duties, he acquired an extensive practice and a large circle of friends. The first symptoms of his fatal disease of the stomach appeared two years ago, from which time on his health declined until death put an end to his sufferings. Up to a fortnight before his death, although feeble from ill-health, he insisted on attending to his medical duties.

THE WORK OF THE PEN.—A rapid penman can write thirty words in a minute. To do this he must draw his pen through the space of a rod, sixteen and a half feet. In forty minutes his pen travels a furlong. We make, on an average, sixteen curves or turns of the pen in writing each word. Writing thirty words in a minute, we must make 480 turns to each minute; in an hour, 28,000; in a day of only five hours, 144,000; in a year of 300 such days, 43,200,000. The man, therefore, who made 1,000,000 strokes with his pen was not at all remarkable. Many men—newspaper writers, for instance—make 4,000,000. Here we have, in the aggregate, a mark 300 miles long to be traced on paper by such a writer in a year.—Ex.

HORLICK'S FOOD.—This food seems to be attaining very considerable popularity. The medical journals throughout the country contain many flattering notices of it. A trial of its efficacy should be made, and then each physician would be able to judge for himself. It is put up in neat packages, and is not expensive.

PARKE, DAVIS & CO., Detroit, Mich.,

MANUFACTURING CHEMISTS.

Fluid Extracts.

We manufacture a full line of fluid extracts, both official and non-official, making a specialty of the newer additions to the materia medica. By our process, we, as fully as is possible, exhaust the medicinal principles of the drug. By the strictest care taken in the selection of the crude material, and the most approved process of manufacture, operated by the highest skill, we succeed in producing fluid extracts which are unexcelled and rarely equalled for fullness and constancy of strength.

Sugar-Coated Pills, OVIFORM AND ROUND.

Our pills are made entirely by hand, from the purest materials, and are sugar-coated by a method avoiding the use of heat above 90° F., without impairing either their efficacy or solubility.

For solubility, regularity of shape and beauty of finish they are excelled by none.

They are coated while the mass is yet soft, and will remain in same condition for years.

Special formulae made and coated to order, when desired, in lots of 3,000 or upwards.

Medicated Lozenges.

Lozenges are of use in pharyngeal troubles that yield to ordinary medication. By being slowly dissolved, the medicament they contain is brought into contact with the diseased mucous membranes, and hence a beneficial influence, local as well as general, is exerted. In this respect they are of inestimable value to public speakers, teachers, singers, etc., as they are handy to carry about the person. In certain diseases of children, in worms, dyspepsia, and in cases where it is desirable to carry the remedy about the person (as with travelers), the lozenge is a useful form for a medicament. We manufacture fifty formulae.

Special formulae made to order of any desired size, shape, color or flavor, when ordered in quantities of three pounds or more.

Elixirs, Wines and Syrups.

We desire to call the attention of pharmacists to our preparations embraced under this head.

Prepared with all the improvements which long practical experience and high medical authority can suggest, we offer them as combining with therapeutical value, agreeableness of taste, and elegance in appearance.

We put them up in pounds, half gallons and demijohns.

N. B.—When ordered simply in "bulk," these articles will be sent in half-gallon bottles. If desired in four-ounce, one or five pound bottles, or in demijohns, please specify.

SPECIALTIES AND SUNDRIES.

Cascara Cordial.
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Empty Capsules.
Lactated Pepsine.
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Acid, Hydrobromic Solution.
Acid, Salicylic Pure.
Berberina Hydrochlorate (Hydrastin Mur.).
Berberina Phosphate (Hydrastin Phosphate).

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Dialyzed Iron.
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Nitrite Amyl.
Nitrite Amyl Pearls.
Picric Acid.
Pepsine Liquid Concentrated.
Pepsine and Lacto-Phos. Lime Lozenges.
Pure Cold Refined White Norwegian Cod Liver Oil.
Quinine Elixir.
Solution Sclerotic Acid.
Sulph. Carbolate Sodium.
Syrup Iodine Iron.
Yerba Santa Lozenges,
Etc., Etc., Etc.

CONCENTRATIONS.

Our list of Concentrations comprises the proximate medicinal principles of the several plants named, either combined in the form of a powder, consisting of two or more constituents, or isolated in the form of a powdered alkaloid or resinoid. These are a very eligible form in which to administer medicines, and are highly prized by many. Put up in ounce bottles and bulk.

For Descriptive Circular and Price List of above, send to

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BE PARTICULAR TO GET THE GENUINE

Kidder's Saccharated Pepsine.

TAKE NO OTHER.

OUR PEPSINE IS NOT SOLD IN BULK; the only way you can get the genuine is in original packages, as follows:

ONLY STYLES OF KIDDER'S SACCHARATED PEPSINE.

One ounce, four ounce and eight ounce oblong white flint glass bottles, with our name (Kidder & Laird) blown in the bottle, and sixteen ounce round (plain) bottles, all having on them our metallic caps and labels. **THESE ONLY STYLES, THE GENUINE,** are sold at 35 cents per ounce, in quantities less than a pound, and \$4.50 by the pound.

CALIFORNIA.

SAN FRANCISCO, CAL., Sept. 13th, 1878.

KIDDER & LAIRD:

Gentlemen—I have used Kidder's Saccharated Pepsine in my own family with the most satisfactory results, and consider it one of the best preparations of the kind manufactured. Yours, etc.,

JAMES G. STEELE, *Chemist*.

SAN FRANCISCO, CAL., July 1st, 1878.

KIDDER & LAIRD:

Gentlemen—We find it very satisfactory, and will always purchase your brand hereafter. Yours, etc.,

LAFORE & KAHN.

CONNECTICUT.

BRIDGEPORT, CONN., July 15th, 1878.

KIDDER & LAIRD:

Gentlemen—The physicians have used it in prescriptions, and think it a valuable preparation, and as good as they ever saw, and will give it the preference in their practice. I have been using Hawley's for the last five or six years. Yours, etc.,

W. & E. SHELTON.

WILLINGTON, CONN., Sept. 29th, 1877.

KIDDER & LAIRD:

Gents—Your elegant preparation of Pepsine has been received. I think it superior to any that I have ever used in my practice. Yours, etc.,

W. L. KELSEY, M. D.

ILLINOIS.

EDGEWOOD, ILL., July 11th, 1878.

KIDDER & LAIRD:

Gentlemen—I find Kidder's Saccharated Pepsine a fine article and very effective in conjunction with other treatments in cases of cholera infantum; would recommend it highly in such cases. Yours, etc.,

JOSEPH HALL, M. D.

MILLSTADT, ILL., June 25th, 1878.

KIDDER & LAIRD:

Gentlemen—I have adopted the use of Kidder's Saccharated Pepsine in preference to any other. It has proved satisfactory in every respect. Yours, etc.,

F. H. KRING.

STANTON, ILL., July 30th, 1878.

KIDDER & LAIRD:

Gentlemen—Please send me one pound of Kidder's Saccharated Pepsine. This makes two and three-quarter pounds. I have used it mostly in prescriptions, and prescribed it in my practice, and find it a reliable article. Yours, etc.,

GEORGE BLEY, M. D.

STONE CREEK, ILL., June 15th, 1878.

KIDDER & LAIRD:

Gentlemen—I gave forty grains, in ten-grain doses, and it acted like a charm; shall use no other.

Yours, etc., L. HOBIE, M. D.

WELLINGTON, ILL., March 2d, 1878

KIDDER & LAIRD:

Gentlemen—I shall be glad to avail myself of another supply when needed. I have tested it, and find it fully up to your representations.

Yours respectfully, DANIEL WESTON.

INDIANA.

GALVESTON, IND., July 8th, 1878.

KIDDER & LAIRD:

Gentlemen—I have given your Kidder's Saccharated Pepsine my careful attention, and find it a splendid preparation. I can recommend it in my practice on account of its good qualities.

Yours, etc., B. U. LOOP.

INDIANAPOLIS, IND., July 12th, 1878.

KIDDER & LAIRD:

Gentlemen—Have given Kidder's Saccharated Pepsine in a number of cases of dyspepsia; also given it to the physicians in this locality, who were well pleased with the superior quality of it.

Yours, etc., S. J. HILLMAN, M. D.

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FOR SALE AT ALL WHOLESALE AND RETAIL DRUGGISTS.

SULLIVAN, IND., July 11th, 1878.

KIDDER & LAIRD:

Gentlemen—I have prescribed your Saccharated Pepsine, and recommended it to several physicians, who have used it and pronounce it a first-class article.

Respectfully yours, H. McLOTT, M. D.

WATERMAN, IND., July 19th, 1878.

KIDDER & LAIRD:

Gentlemen—I have ascertained from three doctors in my neighborhood that your Kidder's Saccharated Pepsine is a better article than some of the more expensive preparations.

Yours, etc., OLIVER LA TOURETTE.

LOUISIANA.

DELHI, RICHMOND PARK, LA., March 20th, 1878.

KIDDER & LAIRD:

Gents—When in need of Pepsine will always order Kidder's in preference to all others, as I like it best.

Yours very respectfully, E. W. THOMSON.

MANSFIELD, LA., Jan. 31st, 1878.

KIDDER & LAIRD:

Gents—I know it to be an excellent remedy, and shall in future keep it always on hand, both for my practice and myself.

Yours respectfully, R. T. GIBBS, M. D.

MARYLAND.

ANNAPOLIS, June 20th, 1878.

KIDDER & LAIRD:

Gentlemen—Since the reception of your sample of Kidder's Saccharated Pepsine we have used no other. We consider it a first-class preparation. We have never heard anything to the contrary. We shall continue to dispense it unless well-founded objections are made, which we do not fear. We purchase from Messrs. Thomsen & Muth.

Yours, etc., J. F. PERKINS & BRO.

BALTIMORE, June 19th, 1878.

KIDDER & LAIRD:

Gentlemen—I am using Kidder's Saccharated Pepsine with a great deal of satisfaction. I tested it with Scheffer's, and could not detect the least difference, and, in consequence, have had a number of pounds of yours, purchased from Thomsen & Muth.

Yours, etc., ISAAC R. BEAM.

BALTIMORE, June 19th, 1878.

KIDDER & LAIRD:

Gentlemen—Your Kidder's Saccharated Pepsine appears to be all you claim for it. I have not bought a grain elsewhere since I commenced using yours.

Yours, etc., C. A. GOSNELL.

BALTIMORE, MD., June 20th, 1878.

KIDDER & LAIRD:

Gentlemen—Your Kidder's Saccharated Pepsine has given good satisfaction. It is all you claim for it. Will hereafter use none but Kidder's.

Yours, etc., A. C. HUTHWELKER.

181 LEXINGTON ST., BALTIMORE, MD.

KIDDER & LAIRD:

Gentlemen—Have used Kidder's Saccharated Pepsine for the past year with entire satisfaction. I use no other except specially prescribed. I obtain my supply from Messrs. W. H. Brown & Bro., or Messrs. Thomsen & Muth, Baltimore.

Yours, etc., H. C. MOORE, M. D.

BALTIMORE, June 21st, 1878.

KIDDER & LAIRD:

Gentlemen—I have used Kidder's Saccharated Pepsine alongside Scheffer's, Boudault's, and others, as ordered, and have no reason to believe yours below the standard.

Yours, etc., JOHN SCHWARTZ.

CUMBERLAND, MD., Jan. 21st, 1878.

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For Consumption and Wasting Diseases.

HYDROLEINE

Has been proved of the highest value in CONSUMPTION and all WASTING DISEASES, invariably producing Immediate Increase in FLESH and WEIGHT.

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Each dose of two teaspoonsful, equal to 120 drops, contains:

Pure Oil..... 800 m. (drops).	Soda..... 1-2 grains.
Distilled Water..... 35 "	Boric Acid..... 1-4 "
Soluble Casein..... 5 grains.	Hyocholic Acid..... 1-20 "

Dose — Two teaspoonsful alone, or mixed with twice the quantity of soft water, to be taken thrice daily with meals.

The principles upon which this discovery is based have been described in a treatise on "*The Digestion and Assimilation of Fats in the Human Body*," by H. C. Bartlett, Ph. D., F. C. S., and the experiments which were made, together with cases illustrating the effect of Hydrated Oil in practice, are concisely stated in a treatise on "*Consumption and Wasting Diseases*," by G. Overend Drewry, M. D.

In these treatises the Chemistry and Physiology of the Digestion of the Fats and Oils is made clear, not only by the description of a large number of experiments scientifically conducted, but by cases in which the deductions are most fully borne out by the results.

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May be described as partially digested oil, which will nourish and produce increase in weight in those cases where oils or fats, not so treated, are difficult or impossible to digest. In CONSUMPTION and other WASTING DISEASES the most prominent symptom is *emaciation*, of which the first is the starvation of the fatty tissues of the body, including the brain and nerves. This tendency to emaciation and loss of weight is arrested by the regular use of HYDROLEINE, which may be discontinued when the usual average weight has been permanently regained.

The ordinary so-called emulsions of Cod Liver Oil and other fats, *whether pancreaticized or not*, merely remain in the form of a coarse mechanical mixture for a short time after agitation. The digestion of oil, having in no sense been artificially produced, still devolves upon those functional powers, the deficiency of which is the most prominent symptom in these cases.

HYDROLEINE is not a patent medicine or a secret preparation; the formula is on every bottle. Can be taken by the most delicate stomach; is immediately assimilated.

The permanence and perfection of the emulsion, and the extreme solubility of the HYDRATED OIL, solely prepared and sold by us under the name of HYDROLEINE, is shown by its retaining its creamlike condition as long as the purest Cod Liver Oil will retain its sweetness. Unlike the preparations mentioned, or simple Cod Liver Oil, it produces no unpleasant eructation or sense of nausea, and should be taken in such very much smaller doses, according to the directions, as will insure its complete assimilation; this, at the same time, renders its use economical in the highest degree.

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Many prominent physicians, aware of its genuine merits, sanction its use, and are in the habit of prescribing it in their practice; it has, therefore, become a popular medicine, and especially so in those sections of the country where it is best known.

If you will kindly consent to give **Tropic-Fruit Laxative** a trial, we will be pleased to mail you a sample box on application. Yours sincerely,

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"Dextro-Quinine is undoubtedly a very active agent. The testimony of a large number of disinterested men who have put it to the test, places it nearly or quite on a level with Sulph. of Quinine. My own experience of it accords with this view."

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THE USE OF DEXTRO-QUININE IN INTERMITTENT FEVER.

Case.	Name, and sex of patient.	Age, etc.	No. paroxysms before taking.	Paroxysms after taking.	Dose and mode of exhibition.	Total amount exhibited.	Remarks, pathological and physiological phenomenon, etc.	Reported by
34	Miss D.	28	Unknown, a great many.	0	3 grs. every 3 hours.	30 grs.	Had been under treatment about four months with Cinchonidia Sulphate, which would control the paroxysms at the moment but they would invariably return. Used <i>Dextro-Quinine</i> in the same doses and there has been no return of the chills. Another case, Mrs. B., æt. 77, was unable to take Cinchonidia on account of the severe tinnitus aurium. etc. I prescribed <i>Dextro-Quinine</i> without any head symptoms with satisfactory result.	G. S. Krieger, M.D., Lebanon, O.
74	Geo. C., male. "Has used Quinine until the name of it gave him the horrors."	28 Single.	Unknown, has been suffering with almost daily paroxysms for nearly 2 years.	0	0 grs., in three doses of 3 grs. each, 3, 2, and 1 hour before the expected attacks.	9 grs.	Missed chill on first day, put him on pills containing <i>Dextro-Quinine</i> , Ferri. Acid Arsenicus and Ext. Nux Vom., and has had no return of chill to date. This man in connection with the chills was down with the yellow fever in Memphis during the late scourge. He returned here and has been under my treatment ever since his return. I have used Quinine and Cinchonidia with very poor success in his case.	B. S. Chambers, M.D., Cincinnati, O.
143	Miss Smith.	27	3	0	4 grs. every 2 hours combined with ½ gr. doses of Capsicum.	16 grs.	The best word I can say for <i>Dextro-Quinine</i> is, that I have not prescribed any other anti-periodic since receiving sample of <i>Dextro-Quinine</i> . I find the action more certain when combined with Capsicum, as I also did with Sulphate of Quinine.	J. W. Lisle, M.D., Millfield, Ohio.
144	Miss Artz.	25	For 3 years more or less frequently.	1	4 grs. every 3 hrs. until 16 grs. were given, then same repeated.	32 grs.		
145	Mrs. C. Taken Quinine without any effect.	25	15	0	2 gr. pills, 2 every 2 hours.	34 grs.	Had taken quinine without any effect. Had had no return since using the <i>Dextro-Quinine</i> . Now over four months.	J. Frank Vitor, M.D., Gilead Station, Ohio.
150	Lena Rush Had taken 15 grs. of Quinia daily without effect.	26 mother 4 children	8	0	2 gr. pill every hour till 5 were taken.	20 grs.	Paroxysm every day about 4 p.m. Cold and hot stages short, followed by very profuse sweating. Had taken Sulphate of Quinia 15 grs. per day, without any effect whatever.	A. J. Learned, M.D., Patakalaka, Ohio.
178	Mr. C.C.	40	20 or more.	0	5 grs. every 3 hrs. until 30 gr. taken, then 5 gr. 3 times a day.	120 grs.	I find that it is equally as good as Quinine Sulphate, with none of the unpleasant head symptoms derived from the latter.	J. F. Heady, A.M., M.D., Springdale, Ohio.
179	Mr. H.O.	42	Two, but often had them previously.	0	5 grs. every hr., till 30 grs. were given.	30 grs.	Perfectly satisfactory. Have obtained only good results in the cases in which I have used the <i>Dextro-Quinine</i> .	
192	Jas. L.	26	About 30.	0	15 grs., in 3 powders, 3, 2, and 1 hr. before the chill.	15 grs.	In all these cases I began treatment with Cathartic, then after chill was checked put them on tonics, and on 7th, 14th and 21st days, I repeated the dose in lessened quantities. I very seldom have any trouble with return of chill.	
193	Annie C.	17	3	0	12 grs., in 4 pills, 2 at night and 2 in morning.	12 grs.	I sent you report of the 1st case I had, Geo. Caldwell, which was the worst case I have ever seen. He has never had any return. I have used it in a large number of cases with about the same average result as when I used the Sulph. of Quinine. I cannot say that I see much difference between <i>Dextro-Quinine</i> and Sulphate of Quinine. I send 3 reports of cases from my own O. D. P. list. Of course, cases of this kind are usually of the very worst type. I send from my list, cases Nos. 18, 33, and 48.	B. S. Chambers, M.D., District Physician, Newport, Ky.
194	Jas. J., col'd.	38	About 30.	0	20 grs., in 4 pills, 4, 3, 2 and 1 hour before chill time.	20 grs.		

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BARON LIEBIG, the greatest authority on Infant Diet, states that the majority of children who die under one year of age, do so from the effects of improper food, or from the improper administration of the food.

HORLICK'S FOOD.

A Concentrated Extract, prepared according to the Formula of Baron Liebig, and, unlike other Foods,
IS NOT FARINACEOUS.



It is acknowledged by Physicians to be the best Food
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Speaking of **HORLICK'S FOOD**: "Being carefully prepared, according to Liebig's Formula, by Chemists fully competent, it possesses certain advantages, such as quick and easy preparation and a pleasant flavor, and is therefore highly esteemed by those who have used it." [Page 58 of the fourth edition of *a Treatise on Diseases of Infancy and Childhood*. By J. Lewis Smith, M. D., etc.—1879] Also, speaking in another place [Page 64] of artificial food for infants, especially those suffering from intestinal catarrh, he says: "I prefer Liebig's, especially **HORLICK'S** preparation of it."

Report from Bellevue Hospital, New York.

In *The Hospital Gazette* for February 6th, 1879 [page 108] Dr. E. Hochhelmer makes a report from **BELLEVUE HOSPITAL** of a case of Infantile Paralysis, which was followed by an exhausting diarrhoea.—Speaking of the treatment, he says: "Her condition continued unchanged for the next three weeks; she was put upon a diet consisting principally of milk, but the diarrhoea persisted in spite of opiates and astringents."

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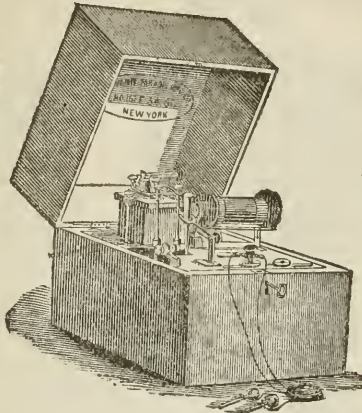
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